

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

3 UNITED SERVICES AUTOMOBILE (CAUSE NO. 2:20-CV-319-JRG
((Lead)
4 ASSOCIATION, (CAUSE NO. 2:21-CV-110-JRG
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5 Plaintiff, ()
6 vs. ()
7 PNC BANK, N.A., (MAY 12, 2022
(MARSHALL, TEXAS
8 Defendant. (8:30 A.M.

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14 TRIAL ON THE MERITS

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16 BEFORE THE HONORABLE RODNEY GILSTRAP
17 UNITED STATES CHIEF DISTRICT JUDGE

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1 THE COURT: Be seated, please.

2 Are the parties prepared to read into the record those
3 items from the list of pre-admitted exhibits used during
4 yesterday's portion of the trial?

5 MR. BUNT: Yes, Your Honor we are.

6 THE COURT: Please proceed.

7 MR. BUNT: Plaintiff used the following exhibits
8 yesterday: DX 1678, PX 13, PX 14, PX 43, PX 96, PX 150, PX
9 158, PX 175, PX 219, PX 296, PX 299, PX 304, PX 814, PX 877,
10 PX 1080, PX 1481, and PX 1971.

11 THE COURT: All right. Does the Defendant have any
12 objection to that rendition?

13 MS. SMITH: We do not, Your Honor.

14 THE COURT: Does Defendant have a similar rendition
15 to read into the record?

16 MS. SMITH: We do, Your Honor.

17 THE COURT: Please proceed.

18 MS. SMITH: PX 362, PX 926, DX 25, DX 692, DX 1231,
19 and DX 1419.

20 THE COURT: Any objection, Mr. Bunt, from the
21 Plaintiff?

22 MR. BUNT: No, Your Honor.

23 THE COURT: All right. Thank you, counsel.

24 All right. Defendant, I assume you're prepared to go
25 forward with your next witness, and am I correct this will be

1 by deposition?

2 MR. LANTIER: Yes, Your Honor. We are prepared, and
3 it will be by deposition.

4 THE COURT: All right. Let's bring in the jury,
5 please.

6 (Whereupon, the jury entered the courtroom.)

7 THE COURT: Good morning, ladies and gentlemen.
8 Welcome back. Please have a seat.

9 Defendant, call your next witness, please.

10 MR. LANTIER: Your Honor, PNC calls Bharat Prasad,
11 who at the time of his deposition was principal technical
12 architect of USAA. His deposition will be played.

13 THE COURT: Before we play the deposition, ladies
14 and gentlemen, I want to clarify something for you. This
15 gentleman testified live in the Plaintiff's case in chief.
16 He's available to testify live in the Defendant's case in
17 chief, but the Defendants have opted to present his testimony
18 by deposition.

19 Given the designation applied to him at the time he was
20 deposed and the particular provisions of the Federal Rules of
21 Civil Procedure, I've determined that it's appropriate for the
22 Defendant to choose to present him by deposition in their case
23 in chief rather than calling him live. But the fact that you
24 saw him live earlier in this trial and are now going to see
25 him by video deposition, I did not want it to be confusing to

1 you. All right.

2 Let's proceed with the witness by deposition.

3 BHARAT PRASAD, BY SWORN VIDEOTAPE DEPOSITION,

4 Q. So the first time you had the idea -- that USAA had the
5 idea of using a display on a mobile device with an integrated
6 camera to help the user take the picture was in the
7 October/November 2006 time frame, and you continued to develop
8 that into 2007. Is that fair?

9 A. I would -- I would say it's 2005. The reason for that is
10 we knew that the display does not have to be a part of the
11 device. Right? We didn't have to have the same form factor
12 for both the display and the camera. We knew that it can be
13 separate. It doesn't have to be -- just like the scanner bed.
14 Right? Deposit@Home was for scanners. Scanner is a camera,
15 but scanner is not a display. So scanner -- we knew that
16 scanner can be a camera. And so the same concept came with
17 the display can be still your own home computer. So I would
18 say that concept goes all the way back to 2005.

19 Q. When did USAA employees first conceive of using a mobile
20 device with an integrated camera to take pictures of checks?

21 A. So when you say integrated camera, you're talking about
22 single form factor? Is that --

23 Q. Yes.

24 A. -- how I understand it? Okay. So a single form factor,
25 again we started looking at camera devices from

1 October/November 2006. But if you look at the webcam capture
2 that happened by the member, that was integrated because the
3 webcam itself was integrated into the home computer. Right?

4 So when the member took a check image in Deposit@Home,
5 that was specifically meant for scanners, but we knew that it
6 would work with cameras. So that integrated system with the
7 webcam was in 2005.

8 Now, handhelds, like mobile devices with integrated
9 camera and -- you know, and screen, that was in the October
10 2006 time frame.

11 Q. So you identified a TWAIN -- a TWAIN training library
12 document, and you identified a discussion about a customer
13 email -- or a -- sorry, a customer using a camera in 2006.

14 Are there any other documents you can identify for me
15 that show that USAA had conceived of using a digital camera as
16 opposed to a scanner to capture a check image before October
17 2006?

18 A. I believe there was also an email exchange that I
19 remember between several people within USAA about the concept
20 of using a camera, why should not we use a camera instead of a
21 scanner to capture the check. And that was more like an email
22 exchange at the time. But that was email exchange among some
23 of the bank executives and the leadership.

24 But the core team, which included us, we knew the
25 possibility of that already in June 2005. Right? So it was

1 not news to us because we had already integrated a TWAIN
2 application to look at scanners and cameras.

3 So, for us, the camera concept was already there
4 well -- well in 2005. But the actual work did not start just
5 because we wanted to restrict that application to scanners by
6 choice.

7 Q. When did you actually show that by actually demonstrating
8 that -- that the software could take a picture of a check with
9 a camera, digital camera?

10 A. Yeah. So that was -- we didn't show the concept working
11 with an actual camera in October 2005. We showed it with the
12 scanner. The code that was written was working for both
13 scanners and cameras, as I said.

14 So the first time --

15 Q. When did --

16 A. -- when we saw -- when we saw the member actually use a
17 webcam -- and I don't know the time frame for that, the first
18 time when we saw a member actually use a webcam to deposit a
19 check, that was, I think, somewhere around the time when we
20 released the product to the member in August 2006. And there
21 was a time frame from August 2006 when the members got the
22 product released and the member tried with the webcam. That
23 was the first indication of someone actually using a camera to
24 deposit the check. Right?

25 But when we did the prototype in October 2005, that was

1 completely already coded for both scanners and cameras.

2 Q. Okay. So the -- the customer was the first person to
3 actually use a camera that was separate from a -- from a
4 scanner to submit a check image taken by a camera?

5 A. The customer was the first person to use it from a member
6 perspective, correct, yeah.

7 Q. No one at -- no one at USAA had tried to submit a check
8 image using a webcam, for example, before the customer first
9 did so in October 2006?

10 A. That would be correct, yeah.

11 Q. Okay. And so having looked at this would -- you would
12 agree that the -- that the time the -- that a customer of USAA
13 first actually used a digital camera to submit a check image
14 was around October 25th, 2006?

15 A. Correct. Well, this is the email that Chuck Oakes is
16 sending to two of his executives saying that we found that a
17 member used his camera. Right? But the actual date when the
18 member used this camera might be before October 25th. I don't
19 know when exactly it was. It was after August -- sometime in
20 August, because that's when we released it to membership. So
21 it must have been between August and October time frame.

22 Q. So if you have a system in place for doing deposit of
23 checks with a scanner -- capturing images of checks with a
24 scanner, is it -- is it easy to also process images taken with
25 a handheld camera or mobile device?

1 A. It's not.

2 Q. Why do you say that?

3 A. So the intent -- that -- what I say here as a concept is
4 no different means -- it's talking about, yeah, I want to use
5 now a mobile device to capture my check image. That's --
6 that's where it ends. But the actual internal concepts of
7 using a mobile device with a camera to do the same thing that,
8 you know, a desktop application tied to a scanner does is
9 completely different. It's a different ball game completely.
10 Right? Capturing an image from a camera that's tied to a
11 handheld mobile device introduces a lot of complexity around
12 how you capture it, how you process the check image to a
13 satisfactory position where you bring it to a banking system
14 that will accept the check image as a valid deposit and the
15 bank of -- the bank that produced the check will accept it as
16 a valid debit.

17 So those are the things you need to think of and how
18 complex it could be from -- moving from a scanner resolution
19 to a handheld camera resolution.

20 Q. Tell me -- tell me more -- you say it's a completely
21 different ball game. Can you -- can you tell me any more
22 about why it's so different to handle check images taken with
23 a camera versus a scanner?

24 A. Yeah. If you look at scanners today. Right? Or even in
25 2005 when we were doing it, it was a very controlled

1 environment. So when I say controlled environment, a scanner
2 is a completely 2-D surface for all practical purposes. You
3 place a document on a scanner bed, and you scan the image.
4 You are assured that is a 2-D image, and you're also assured
5 of certain very simple aspects that come with a 2-D image.
6 You know that is falling within the rectangle of the -- the
7 capture, the scanner bed. And so you are having an easier way
8 and mechanism and also the lighting is controlled and the kind
9 of resolution that you get out of a scanner is very easily
10 controlled.

11 Now, you -- you take the same problem and try to
12 translate it to a camera that's tied to a mobile handheld
13 device--right?--like an iPhone, you're now talking about a 3-D
14 environment in which you are trying to capture a 2-D object,
15 like a check. So the translation of the 3-D environment to a
16 two-dimensional object of a check goes through a complex set
17 of series of steps and processes and algorithms to make it
18 really happen.

19 Q. And how hard a problem is that actually to solve?

20 A. Extremely hard.

21 Q. Why is that?

22 A. So if you look at the -- the field of image processing
23 today--right?--image processing has been evolving ever
24 since -- I don't even know what the date is, but image
25 processing has been in academia for a long time.

1 People have been writing academic papers and all kinds of
2 articles and textbooks around how, you, image -- images can
3 be, you know, captured, extracted, information can be gathered
4 up of the images. But you see the complexity of trying to do
5 something for humans, it's intuitive to say, oh, I can see a
6 check in an image just by our -- our brains and eyes can tell
7 it right away.

8 But for a computer or an algorithm or a code -- piece of
9 code to do the same thing is really extremely complex problem.
10 You need things like, you know, shaping algorithms,
11 histograms, you need things like skewing algorithms, and you
12 need ability to segment.

13 So there's a multi -- multiresolution or a segmentation
14 algorithm that needs to happen to separate out a region of
15 interest from the entire image. So these are all pieces that
16 really go into -- really computational algorithms that you
17 need to write to extract something as simple as a check from
18 an image that might contain a table in a room, a coffee cup,
19 or whatever. Right?

20 Q. And if I could have you turn to the last page under the
21 heading Proposal, the proposal is to research the viability
22 for USAA to take check deposits via digital cameras. Do you
23 see that --

24 A. Yes, I do.

25 Q. -- the first one?

1 And is that part of the -- is this the sort of research
2 project that you were telling me about a moment ago about all
3 the work that had to be done?

4 A. Yes, sir.

5 Q. Do you recognize Exhibit 9?

6 A. Yeah.

7 Q. It's labeled Deposit@Home Next Generation with your name
8 and December 3rd, 2007. Do you see that?

9 A. Correct.

10 Q. And is this a presentation you gave in December 2007?

11 A. Yes, I did.

12 Q. Yeah. Let me ask you this. If you turn to the sixth
13 slide --

14 A. It's slide number 6, you say?

15 Q. Yeah. And these were -- these were approaches that you
16 were still researching in December 2007?

17 A. Yeah. And this -- this is just one set -- this
18 particular slide only talks about the segmentation and edge
19 detection, but there are a lot more of the challenges, yeah.

20 Q. A lot more challenges as well that you were
21 researching --

22 A. Yeah.

23 Q. -- in December 2007. Is that correct?

24 A. Correct, yeah.

25 Q. And these are the kinds of areas where your team had to

1 develop new -- new sort of algorithms to solve the problem?

2 A. Yeah, we had -- we had to write a lot of the coding to
3 handle these things to a satisfactory level.

4 Q. And you see down at the bottom, there's two bullets, the
5 last two. One says TIFF conversions were good only 60 percent
6 of the cases. And MICR info was read only about 25 of the
7 cases. Do you see that?

8 A. I see, yeah, I do.

9 Q. And that wasn't -- that wasn't sufficient, in your view,
10 right to have a working -- to -- to -- for something that
11 would actually work well?

12 A. This is -- this is research again. Right? We are doing
13 research at that point in time, and we are looking at reserves
14 and we are writing code to mitigate some of these things. But
15 certainly this is not the code that's immediately going into
16 implementation or production. This is just indicating at a
17 point in time what the research is seeing.

18 Q. And have seen this document before, Exhibit 22?

19 A. Yeah, I have seen this.

20 Q. What is Exhibit 22?

21 A. So this is actually a work action report, or what we call
22 a WAR. So we used to produce these on a weekly basis. So
23 this particular WAR is my report, work action report, from the
24 period October 24th through 28th. And it basically talks
25 about the kind of work items I'm working on, what is the

1 action, what is the progress on some of these things. So
2 that's what this report is.

3 Q. And if you go down to the second bullet point under
4 accomplishments, do you see a section labeled home deposit?

5 A. Yeah, I do.

6 Q. And the first bullet point there is demo of prototype
7 shown to Chuck Oakes and John Brady. Do you see that?

8 A. Yeah.

9 Q. Is that the prototype that you talked about a little bit
10 earlier today?

11 A. Correct.

12 THE COURT: Does that complete this witness by
13 deposition?

14 MR. LANTIER: Yes, Your Honor, it does.

15 THE COURT: Can you give me the allocated times
16 between Plaintiff and Defendant, please?

17 MR. LANTIER: One moment, Your Honor.

18 Your Honor, the time for Plaintiff is 6 minutes and 47
19 seconds, and the time for PNC is 7 minutes and 47 seconds.

20 THE COURT: All right. Call your next witness,
21 please.

22 MR. LANTIER: Thank you, Your Honor. PNC calls Mr.
23 Michael Bueche, who at the time of his deposition was chief
24 architect and head of architecture and innovation at Silicon
25 Valley Bank.

1 THE COURT: Do you have the time splits for this
2 witness in advance?

3 MR. LANTIER: I do, Your Honor.

4 THE COURT: Please go ahead and give them to me.

5 MR. LANTIER: The Plaintiff's time is 6 minutes and
6 50 seconds, and PNC's time is 1 minute and 49 seconds.

7 THE COURT: All right. Proceed with this witness by
8 deposition, please.

9 MS. CARSON: Your Honor --

10 THE COURT: Yes.

11 MS. CARSON: -- we have a different allocation. I
12 think the 6 minutes and 50 seconds is for the complete play.
13 So it should only be 5 minutes and 1 seconds for USAA.

14 MR. LANTIER: That was a mistranscription on my
15 part. I agree with Ms. Carson.

16 THE COURT: All right. Thank you for the
17 clarification.

18 Let's proceed with the witness by deposition.

19 MICHAEL BUECHE, BY SWORN VIDEOTAPE DEPOSITION,

20 Q. Okay. So you're one of the inventors on this patent,
21 this is the '571 Patent?

22 A. I am an inventor on the '571 Patent.

23 Q. Yeah. What's your understanding of the industry term
24 auto-capture?

25 A. Auto-capture is -- we invented at USAA is the active

1 opening of video stream, monitoring frames, looking for a
2 valid check image within view of the camera. Once one of
3 those frames meets the minimum criteria for us to validate
4 that it is a check image, we then capture that frame
5 automatically without user input.

6 If the image within the frame is not a valid check image,
7 we use something called corrective feedback to allow the user
8 to either reposition the camera or reposition the check or put
9 it on a different background.

10 And then once -- as I mentioned, once a valid check image
11 is within view of the -- of the camera, the software
12 determines when to capture the image and then that gets
13 submitted for future processing, for future check processing.
14 So that whole process encompasses auto-capture.

15 Q. And you understand that the '571 Patent relates to
16 auto-capture. Right?

17 A. The '571 Patent does detail out auto-capture.

18 Q. And in 2007, USAA was testing whether it could use the
19 infrastructure it had developed for Deposit@Home to process
20 check images taken with digital cameras. Right?

21 A. USAA had been processing digital camera images before I
22 got there in 2007. So I can't speak to when it started, but
23 it was well underway when I joined in July of 2007.

24 Q. And did the experimentation involve writing code to try
25 doing auto-capture with different monitoring criteria?

1 A. No. I would say that we built a framework, and it's that
2 framework that's described in the patent, and what we were
3 doing is just tweaking and changing values. So, for instance,
4 on a black background you might want to reduce the contrast
5 requirement or on a white background you might want to
6 increase the contrast. So it's really the same algorithms.
7 We were just changing configuration parameters to figure out
8 the right configuration parameters to make those monitoring
9 criteria work their best.

10 Q. Okay. And so how -- how were the particular monitoring
11 criteria tested to find the right combination of monitoring
12 criteria to get a good check image?

13 A. So we took thousands and thousands of check images and
14 ran them through an automated testing process, and then looked
15 at where did we have a passing check where we expected one or
16 where it failed where we expected a pass. Right? Typical
17 testing techniques.

18 And so we would -- we would run a series of experiments
19 through this automated testing with different monitoring
20 criteria and different configuration of those monitoring
21 criteria until we got into the success rate that was required
22 for production launch.

23 Q. And when was that done?

24 A. 2012 and 2013.

25 Q. And this is part of the experimentation that you were

1 telling me about a minute ago.

2 A. Yeah. Some of it happened in, as I mentioned, with our
3 limited budget in 2012, but the majority of it happened
4 in -- in 2013.

5 Q. Okay. And then you would just test with thousands and
6 thousands of images and see how the -- see how the algorithm
7 performed.

8 A. Yes. It's typical, when developing an algorithm, to
9 build a bunch of test data to test the performance of your
10 algorithm. So that's what we were doing.

11 Q. So around the third -- at -- at the third line of column
12 4, this is your patent, it says, the monitoring criteria may
13 be based on one or more of light contrast on the image, light
14 brightness of the image, positioning of the image, dimensions,
15 tolerances, character spacing, skewing, warping, corner
16 detection, and MICR (magnetic ink character recognition), line
17 detection, as described further herein. Do you see that?

18 A. Yes, sir, I see that.

19 Q. Okay. And nothing in here tells -- tells you which
20 combination of these different criteria would work well.
21 Correct?

22 A. This patent lays out a framework that you could use for
23 auto-capture. It would depend on your specific
24 implementation, which monitoring criteria to use within our
25 framework.

1 Q. Are some of the criteria that are described here more
2 important than others for using to decide when to take an
3 image of a check that will be valid under Check 21?

4 A. Again, I think that's up to the implementer to decide --
5 the implementer of our idea to decide which ones they care
6 about for whatever success rates they're driving for or
7 whatever types of check images that they're processing. So
8 it's up to the implementer.

9 Q. Okay. And the particular monitoring criteria that USAA
10 selected to use for auto-capture, that it determined worked
11 well for getting valid check images, that's not disclosed in
12 any patent. Correct?

13 A. I'm sorry. Are you asking have we disclosed which
14 specific algorithms we're using for monitoring an
15 auto-capture? Is that your question?

16 Q. Yes. And I just want to confirm, first of all, that it's
17 not in this patent, the '571.

18 A. We do not disclose in this patent which algorithms were
19 we're using for monitoring.

20 Q. What is your general understanding of the impact that
21 auto-capture had on USAA's success/failure rates if all other
22 factors are -- are equal, meaning if you control for the
23 impacts of operating systems or characteristics of the phone
24 and things like that?

25 A. Auto-capture, in my opinion, is a critical component to a

1 successfully working MRDC program application at scale.
2 Specifically, it significantly reduces the number of errors
3 that a user might introduce by taking bad pictures of -- of
4 checks.

5 Q. Does your patent disclose sufficient information
6 for -- for someone else to implement auto-capture in their own
7 products?

8 A. Yes. The patent does disclose enough information to
9 implement our idea.

10 THE COURT: Does that complete this witness by
11 deposition?

12 MR. LANTIER: It does, Your Honor.

13 THE COURT: All right. Call your next witness,
14 please.

15 MR. STONE: Thank you, Your Honor. Defendant calls
16 Dr. Omid Kia, who will testify virtually, I guess is how we
17 describe it.

18 THE COURT: All right. Before we proceed, let me
19 explain to the jury, Doctor Kia could not be here physically,
20 but he is testifying remotely. This is not a prerecorded
21 deposition. This is his live testimony. The only difference
22 is he's doing it over the monitoring and audio system in the
23 courtroom as opposed to sitting at the witness stand.

24 Do you have binders to distribute?

25 MR. STONE: Yes, Your Honor.

1 THE COURT: All right. At this time I'll ask Doctor
2 Kia to be sworn by our Courtroom Deputy.

3 THE WITNESS: Good morning.

4 THE CLERK: Good morning.

5 (Whereupon, the oath was administered by the Clerk.)

6 THE COURT: All right, Mr. Stone. You may proceed
7 with direct examination when you're ready.

8 MR. STONE: Thank you, Your Honor.

9 OMID KIA, PhD, SWORN,

10 testified on direct examination by Mr. Stone as follows:

11 Q. Good morning, Doctor Kia.

12 A. Good morning, sir.

13 Q. Where are you today?

14 A. I am actually in Marshall, Texas, today. I'm in a hotel
15 room.

16 Q. And have you been there all week?

17 A. I've been here all week, yes, sir.

18 Q. And just in the hotel room or other places?

19 A. Just in the hotel room. I have not left the premises.

20 Q. And are you unable to be with us here today?

21 A. Yes. I'm not able to.

22 Q. Would you introduce yourself to the jury, please, Doctor
23 Kia?

24 A. Yes, sir. My name is Omid Kia. I live in Maryland, a
25 suburb of Washington, D.C., and I have two very beautiful

1 children and they are both in college right now.

2 Q. And what's your current occupation, Doctor Kia?

3 A. I am currently a subject matter expert at Coastal
4 Communication Consultants where I'm placed as a scientist in
5 various Department of Defense research labs, performing
6 research and image processing and related fields.

7 Q. What's your educational background, Doctor Kia?

8 A. So I have a Ph.D. degree in electrical engineering from
9 the University of Maryland at College Park where I focused on
10 image processing and compression and all the related
11 technology around it.

12 Q. And how much of your career has been spent on image
13 processing?

14 A. Quite a lot. During my Master's tenure, I decided that
15 image processing is where I want to be. And since then, I've
16 dealt with a number of areas in image processing.

17 Q. Did you prepare some slides to help illustrate your
18 testimony today?

19 A. Yes, sir, I have.

20 Q. Let me see if this will work, if I can bring up a slide
21 that shows your experience.

22 MR. STONE: Let's go to the next slide, if we can,
23 Mr. Nickels. Thank you.

24 Q. (BY MR. STONE) And on this slide, do we see a summary of
25 some of your experiences prior to your current job?

1 A. Yes, sir. These are some of the positions I've held in
2 various companies that I've worked for.

3 Q. And did you -- were you involved with image processing in
4 all of these different positions?

5 A. Yes, sir. I was involved in image processing. All of
6 them involved solving very hard problems.

7 Q. Doctor Kia, have you done any work on processing images
8 of checks?

9 A. Yes, sir, I have. I have researched check images as a
10 specific type of a document where I would analyze the color
11 and the texture of a check in an effort to separate it from
12 the background.

13 Q. And have you also done work professionally with digital
14 cameras?

15 A. Yes, sir. Not only have I made digital cameras, but I've
16 also assisted companies in design and developing researching
17 their digital cameras, I've modified digital cameras for
18 purposes that the product requires, and large array of digital
19 cameras for various purposes.

20 MR. STONE: Your Honor, we would offer Doctor Kia as
21 an expert on image processing, including check image
22 processing and digital photography.

23 THE COURT: Is there objection?

24 MR. SHEASBY: No objection, Your Honor.

25 THE COURT: Without objection, the Court will

1 recognize this witness as an expert in those designated
2 fields.

3 Please continue, counsel.

4 MR. STONE: Next slide, please.

5 Q. (BY MR. STONE) Doctor Kia, were you asked to form
6 opinions as to the validity of the four patents that USAA is
7 asserting in this case?

8 A. Yes, sir. And those opinions are shown on the slide.

9 Q. And would you summarize your opinions for the ladies and
10 gentlemen of the jury, please?

11 A. Absolutely. So it's my opinion that USAA's 2006 patents
12 and the '571 Patent, also known as the auto-capture patent,
13 are invalid for a lack of enablement, and also USAA's 2006
14 patents are invalid for a lack of lack of written description.

15 Q. Doctor Kia, have you been able to observe the testimony
16 that has been taken in this case up until today?

17 A. Yes, sir, I have. The Court allowed me to view the
18 testimony transcript from the beginning of the court.

19 Q. And have you seen -- have you seen the written transcript
20 as it occurred of the testimony from Monday forward until
21 today?

22 A. Yes, sir, I have. I followed the transcripts since
23 Monday.

24 Q. And have you taken that into account in the testimony
25 you're going to give here today?

1 A. Yes, sir, I have.

2 MR. STONE: Let me turn to the next slide, if we
3 can.

4 Q. (BY MR. STONE) Does this set out the three topics that
5 you're going to speak to today?

6 A. Yes, sir, those are.

7 MR. STONE: Can we turn to the first topic? The
8 next slide, please.

9 Q. (BY MR. STONE) Can you explain what the enablement
10 requirement is or what lack of enablement is?

11 A. Absolutely. A patent is required to have sufficient
12 information in the disclosure so that one of ordinary skill in
13 the art reading the specification when the application was
14 originally filed in 2006 to be able to make the claimed
15 invention without undue experimentation.

16 Q. And you mentioned there a person of ordinary skill in the
17 art. Do you have a definition of what a person of ordinary
18 skill in the art would be that is appropriate to apply to the
19 four patents in this case?

20 A. Yes, sir, I do, and I have a slide for that.

21 Q. Thank you, sir. Did you also hear Doctor Bovik testify
22 to what he felt was the appropriate standard for a person of
23 ordinary skill in the art?

24 A. Yes, sir, I did, and he had the same definition of one of
25 ordinary skill in the art as I do here.

1 Q. And, Doctor Kia, are you a person of ordinary skill in
2 the art?

3 A. Well, I am at least a person of ordinary skill in the
4 art, but my credentials and experience are much -- much
5 broader than that. I have a Ph.D. degree in electrical
6 engineering, and I have 25 years of experience in the industry
7 and the field.

8 Q. For purposes of the opinions that you have formed here
9 today, with respect to enablement, what part of the patent
10 applications filed in 2006 did you look at to assess whether
11 the enablement requirement was met?

12 A. I looked at the portions of the written description where
13 the inventors described their invention and how it works.

14 Q. Did you also look at the figures?

15 A. I looked at the figures as well, yes.

16 Q. And at what time period do you perform -- as of what time
17 period do you perform your analysis of whether the enablement
18 requirement is met?

19 A. I performed my analysis at the time frame of 2006 when
20 the original application was filed, and I put myself in the
21 shoes of one of ordinary skill in the art reading that
22 specification.

23 Q. And did the disclosures in USAA's 2006 patent
24 applications enable one of ordinary skill in the art to know
25 how to make a remote deposit system that could process check

1 images from mobile devices?

2 A. No, not at all.

3 MR. STONE: If we could go to the next slide,
4 please.

5 Q. (BY MR. STONE) We've heard a lot about this, Doctor Kia,
6 but -- so let me just ask you briefly. Have we highlighted in
7 yellow two of the pieces of information from a check that are
8 crucial to be able to be read in a remote deposit system in
9 order for it to work?

10 A. Yes, sir. Those highlighted portions, the routing
11 number, account number, and the courtesy amount are crucial
12 for a transaction to complete.

13 Q. And do those -- are those read by something we've heard
14 about during the course of this trial called OCR, or optical
15 character recognition?

16 A. Yes, sir. Once an image of a check is captured with
17 sufficient quality, a program like an OCR would decode those
18 and make it available to other systems.

19 Q. When you say of sufficient quality, what are you
20 referring to?

21 A. Well, OCRs are not perfect, and you have to have a
22 certain image quality for them to operate properly, so the
23 image needs to be of sufficient quality so that the OCR engine
24 can do its job.

25 Q. Did USAA in 2006 have a remote deposit system?

1 A. Yes, sir, they did. They had a system called
2 Deposit@Home where the system utilized a scanner to take a
3 picture of the -- of a check like this, and from that scanner,
4 they provided the image to two different products that they
5 had purchased. One was All My Papers, where the image would
6 be presented and the MICR line would be decoded. The second
7 one is a product from Mitek, and that would decode the
8 courtesy amount, the amount that's written by the check owner
9 for the transfer of the funds.

10 Q. Could they have used this system and produced acceptable
11 images using mobile phones in 2006?

12 A. No, not at all. The quality of mobile phones in 2006 was
13 not sufficient and it presented a range of challenges to solve
14 for it to be able to successfully decode those fields and be
15 depositable.

16 Q. We've heard testimony in this case that moving from a
17 scanner to the use of mobile phones to capture check images
18 was a paradigm shift. Would you agree or disagree with that
19 statement?

20 A. I would agree with that.

21 Q. We've also heard that it was described as a different
22 ball game completely to go from a scanner to a mobile phone.
23 Would you agree or disagree with that?

24 A. I would agree with that as well.

25 Q. We heard some testimony about a 3-d or a

1 three-dimensional environment and a 2-d environment as applied
2 to this issue of using mobile phones. Can you explain what
3 the difference is between those two?

4 A. Yes, sir. I do remember that in the transcript.

5 The difference is that when the check is presented to a
6 scanner, it's a controlled environment and that's what
7 referring to as a 2-D environment. When the check is placed
8 on top of the glass of the scanner, it is flat. And when you
9 close the top, it is flat, it is registered with the scanner
10 as to where the focus of the image is, there's controlled
11 lighting, there is high resolution, and you get a very
12 predictable result by using a scanner; whereas, the 3-D
13 concept is -- stems from a consumer using a free-floating
14 image capture, such as one with a mobile device. And as the
15 consumer positions that mobile device to take a picture of an
16 image, it is operating in an open 3-D space, so it would
17 result in a number of problems such as skew and warping and a
18 lot of other different problems.

19 Q. If we can go to the next slide, please, Doctor Kia, and
20 then we'll go to the one after that, I think.

21 A. Yes, sir.

22 Q. What -- can you very quickly, because I know the jury has
23 already heard something about this, just tell us what we see
24 on the slide that is now on the screen, which is DDX 7.11?

25 A. Absolutely. So I'm showing a problem with background, so

1 when a user is making an image and the background can bleed
2 into the foreground just because the colors are very similar.

3 MR. STONE: If we go to the next slide, please.

4 THE WITNESS: So this is a --

5 Q. (BY MR. STONE) Go ahead. What do we see illustrated
6 here, Doctor Kia?

7 A. We see a problem where the user is taking a picture from
8 the angle, and that's what I'm showing as skewing.

9 Q. If we go to the next slide, what do we see depicted on
10 this one?

11 A. And this is a problem with warping where the user is at
12 an angle, and it shows a trapezoid shape of the check.

13 Q. And if we could go to the next one, if you would describe
14 for us what we see on this one.

15 A. And this is -- I'm demonstrating lighting where a flash
16 of light is present on the check image, which is really
17 similar to if there was a shadow as well. So lighting -- I'm
18 demonstrating lighting problem with this slide.

19 Q. And what do we see illustrated on the next slide?

20 A. And this is a problem that I'm demonstrating with
21 resolution, either with a camera that does not have sufficient
22 number of pixels on it or that the camera is moving when the
23 user is holding the mobile phone and it's moving or shaking.

24 Q. Are the various issues or challenges that you've just
25 described for us ones that USAA would have encountered when

1 they were trying to use mobile phones to obtain check images
2 for deposit?

3 A. Yes, sir. These are very real problems for them.

4 Q. Over the time period that USAA worked on this, did they
5 ultimately develop solutions to these problems?

6 A. For almost -- they eventually developed solutions with
7 the exception of the resolution, this one.

8 Q. And who -- was there ever a resolution of the resolution
9 issue that is shown on this slide?

10 A. Well, the devices such as Apple and Samsung, the iPhone,
11 and other mobile devices produced devices that can take a high
12 resolution images, and that is what solved this problem.

13 Q. Are there various problems that might arise when you use
14 a mobile phone to try to obtain a check image that can be
15 deposited, ones that are predictable?

16 A. No, they are very is unpredictable other than what type
17 of device the user may use, what mobile device, but also how
18 the user takes the picture of the check is extremely
19 unpredictable, as I discussed a few minutes ago.

20 Q. What is required in order to solve the challenges or
21 problems of obtaining check images of sufficient quality using
22 a mobile phone?

23 A. You have to develop new algorithms and you have to test
24 them to be able to come up with a solution that addresses
25 these challenges.

1 Q. And have you been able to see the testimony of various
2 USAA engineers that has been presented at this trial regarding
3 the algorithms that they developed?

4 A. Yes, sir, I've been present for that, and I know that
5 they developed algorithms to address these problems.

6 Q. And have you also had the opportunity to review other
7 information, depositions, and documents about the algorithms
8 that were developed by USAA engineers?

9 A. Yes, sir, I have seen a lot of evidence regarding that.

10 Q. Would you tell the ladies and gentlemen of the jury,
11 please, Doctor Kia, what is an algorithm?

12 A. An algorithm is a process whereby with one is --

13 THE COURT: Just a moment.

14 MR. STONE: Just a moment, Doctor Kia.

15 THE COURT: What's your objection, counsel?

16 MR. SHEASBY: There is no definition of algorithm --

17 THE COURT: You're going to have to speak up, Mr.
18 Sheasby.

19 MR. SHEASBY: There is no definition of algorithm in
20 his report, Your Honor.

21 THE COURT: Response, Mr. Stone?

22 MR. STONE: Yeah. I think this is just clarifying
23 that subject that is well within the scope of his expertise
24 and is implicit in all of the discussion in his report as to
25 what an algorithm is.

1 THE COURT: Implicit is not disclosed in his report.
2 I'm going to sustain the objection.

3 MR. STONE: Thank you, Your Honor.

4 Q. (BY MR. STONE) Doctor Kia, would a person of ordinary
5 skill in the art in 2006 have known about the algorithms that
6 USAA developed to deal with these challenges?

7 A. No, they would not.

8 Q. Do the patent applications that were filed in 2006 teach
9 a person of ordinary skill in the art how to solve the
10 challenges that you have been describing for us?

11 A. No. The disclosure of the patents does not teach one of
12 ordinary skill in the art to do that.

13 Q. Did those applications include descriptions of any
14 working examples of a remote deposit system that would use
15 mobile phones?

16 A. No, there are no working examples with mobile devices.

17 Q. How much experimentation did USAA engineers need to do in
18 order to solve the problems that you have identified here?

19 A. They spent a lot of time, almost two years, to just get
20 to that. USAA themselves spent a lot of time researching and
21 experimenting to come up with a solution.

22 Q. Did you hear testimony during the course of this trial as
23 to when they started on their research?

24 A. Yes. They started on research, from testimony from Mr.
25 Medina, in early 2007, and it went on until 2009. And that

1 was also corroborated by that testimony that I've seen from
2 Mr. Prasad and others, Mr. Morris.

3 Q. Would the system that -- the Deposit@Home system have
4 worked without the -- or let me not limit it to Deposit@Home.
5 Would a remote deposit system have worked without the efforts
6 that were made to develop algorithms by USAA's engineers
7 following October 2006?

8 A. Yeah. No, they would not have worked.

9 Q. And did any -- did the USAA engineers who have testified
10 here agree or disagree with your statement?

11 A. They would agree. I've seen testimony and heard
12 testimony from Mr. Medina that he mentioned this -- their
13 system would not work without the algorithms that he
14 developed.

15 Q. Have you prepared a timeline that lists some of the key
16 events with respect to these three 2006 patents?

17 A. Yes, sir, I have.

18 MR. STONE: Could we pull up the next slide, please?

19 Q. (BY MR. STONE) What do we see on the timeline that is
20 now presented in the courtroom, Doctor Kia?

21 A. What I'm showing here is the timeline from the original
22 patent application that was filed in October 31st, 2006, and
23 that one year and 10 months later, in September 2008, the
24 first mobile deposit prototype was available, as Mr. Prasad
25 testified. And then much later, in August 11, 2009, the

1 Deposit@Mobile was actually launched to the USAA members.

2 Q. I want to focus on the time period between the original
3 patent applications and the first prototype, if I might, in
4 September of 2008, if that's okay with you.

5 A. Yes, sir.

6 MR. STONE: Can we bring up the next slide?

7 Q. (BY MR. STONE) So we have a number of events on this
8 timeline, and I want to ask you, if you would, to please tell
9 us what the early 2007 entry on this timeline refers to?

10 A. The early 2007 is a evidence that I've seen from
11 deposition transcripts that Mr. Morris and in conjunction with
12 other USAA engineers such as Mr. Prasad were looking at the
13 mobile phones available at the time, and they concluded that
14 they cannot process mobile phone camera images in their
15 system.

16 Q. And then we see the next entry is May of 2007. What does
17 that refer to, Doctor Kia?

18 A. That is referring to the document DX 1129. It's a
19 presentation by Mr. Prasad that he proposed an activity for
20 researching the viability of mobile phones.

21 MR. STONE: And let's just bring up, if we can, DX
22 1129 at page 5.

23 Q. (BY MR. STONE) Is this the portion of the exhibit, DX
24 1129, that you were referring to?

25 A. Yes, sir. This is page 5 of that report, and the second

1 bullet indicates the item that I just mentioned.

2 MR. STONE: Can we go back to the timeline, please?
3 And let's skip to the next one, December of 2011.

4 Q. (BY MR. STONE) What does this refer to?

5 A. So this is, again, another presentation by Mr. Prasad.
6 It is in DX 1110, and in December 2007 he presented this
7 presentation for the current status of his research. And with
8 that, he mentions what I've highlighted there.

9 MR. STONE: Could we bring up DX 1110 at page 12,
10 please?

11 Q. (BY MR. STONE) And what do we see here, Doctor Kia, that
12 was relevant to your timeline?

13 A. Yes, sir. So on this page, Mr. Prasad is reporting the
14 results of his testing, that based on the 1200 unique color
15 images that was taken on the four cameras. Three of them are
16 stand-alone cameras and one of them was iPhone. And the
17 results at the very bottom, he mentions that the MICR
18 information was at only 25 percent of the cases, meaning 75
19 percent of those images could not read the MICR information
20 correctly.

21 Q. Was the 25 percent success rate acceptable or
22 unacceptable to USAA at the time?

23 Yeah, Mr. Prasad mentioned that it is unacceptable
24 and that this was only a research --

25 THE COURT: Just a moment.

1 MR. STONE: Please stop, Doctor Kia.

2 MR. SHEASBY: May I approach, Your Honor?

3 THE COURT: Approach the bench, counsel.

4 (The following was had outside the hearing of the
5 jury.)

6 THE COURT: Yes, Mr. Sheasby?

7 MR. SHEASBY: This relates to the bench memo we
8 filed. The commercial acceptability or unacceptability of our
9 product is absolutely irrelevant for enablement. And Mr.
10 Stone is eliciting questions about whether it was commercially
11 appropriate for us or commercially sufficient for us, violates
12 black letter of federal law. I'd like an instruction to
13 disregard this, sir.

14 THE COURT: What's your response, Mr. Stone?

15 MR. STONE: This relates to the efforts that went
16 into developing a prototype. It has nothing to do with
17 commercialization. Mr. Prasad's testimony was that this was
18 unacceptable in a research environment because they hadn't yet
19 achieved something that was even working. This is all about
20 developing a work product prototype.

21 I'm not relating this to commercialization and, of
22 course, as the Court knows, the efforts it does take to get to
23 commercialization are relevant to enablement. But I'm not
24 asking this witness about that. I'm focused very much on the
25 period leading up to the prototype.

1 MR. SHEASBY: What Mr. Prasad --

2 THE COURT: Just a moment. Are you intending to get
3 into commercialization of this?

4 MR. STONE: I am not.

5 MR. SHEASBY: Your Honor, what he's talking about
6 right now is the commercialization process, about -- talking
7 about what is acceptable or unacceptable to USAA goes to the
8 commercial standards of a company. That is not the standard
9 for enablement. And he can simply report on what the rate was
10 at the time, and he should move on, Your Honor.

11 MR. STONE: There may be a factual dispute for the
12 jury to resolve as to whether Mr. Prasad's depo testimony
13 where he described this as research or his testimony in court
14 where he tried to recharacterize it as commercialization is in
15 dispute. But that's a dispute for the jury to resolve. I
16 believe this is all --

17 THE COURT: Mr. Stone, I'll give you an option.
18 Either you can ask Doctor Kia to clarify that this is not
19 about commercialization and is about solely developing a
20 prototype, or I'll do it.

21 MR. STONE: Okay.

22 THE COURT: But I think it would be easier if you
23 will do it.

24 MR. STONE: I will do it, Your Honor.

25 MR. SHEASBY: In a non-leading manner, Your Honor.

1 THE COURT: If there's a subsequent objection,
2 you'll have to make it.

3 MR. SHEASBY: Thank you.

4 (The following was had in the presence and hearing
5 of the jury.)

6 THE COURT: Let's proceed.

7 Q. (BY MR. STONE) Doctor Kia, at the time in December of
8 2007, where did this work fall in relation to the development
9 of a prototype?

10 A. The prototype was not available at this time. A
11 prototype came, as I showed in my timeline, came later.

12 Q. Is this in doing research or commercialization at USAA?

13 A. This was done in research, as Mr. Prasad also testified.

14 MR. STONE: Let's go if we can to the next slide.

15 Q. (BY MR. STONE) And this just goes back and puts us --
16 taking out the intervening events, this reminds us of how long
17 it was from the original patent application to the prototype
18 and then to the launch. Do you see that?

19 A. Yes, sir.

20 Q. Let me ask you whether, considering the challenges that
21 you've described about implementing a mobile remote deposit
22 system, the state of the art in 2006, the amount of guidance
23 in the 2006 applications that were filed by USAA, and the
24 amount of experimentation that was required to implement such
25 a system, what is your conclusion as to whether or not the

1 asserted claims of these three patents, the 2006 patents, are
2 enabled?

3 A. Yes. Considering all the evidence I've seen and all
4 those factors, it's my opinion that the claims of the 2006
5 patents are not enabled.

6 Q. Let me move you, if it's okay with you, Doctor Kia, to
7 your second topic.

8 A. Yes, sir.

9 Q. What do you -- what is the written description
10 requirement?

11 A. The written description requirement is that the patent
12 has to provide sufficient information to put one of ordinary
13 skill in the art on notice that the inventors had actually
14 made the invention back at the time of the filing of their
15 application, which was 2006.

16 Q. In 2006 when the applications were filed, did they
17 contain the words 'mobile device'?

18 A. No, sir. There's no mention of a mobile device in the --
19 in the applications.

20 Q. Have you taken into account the Court's construction of
21 the term mobile device?

22 A. Yes, sir, I have.

23 MR. STONE: Could we bring up the next slide,
24 please.

25 Q. (BY MR. STONE) What do you show on your slide 7.35,

1 Doctor Kia?

2 A. I show the Court's order for the construction of the term
3 mobile device to mean it's a handheld computing device.

4 Q. And in your opinion, Doctor Kia, would the specifications
5 of the 2006 patent applications have conveyed to a person of
6 ordinary skill in the art reading those patents at that time
7 that USAA had invented the system for remote deposit using
8 check images obtained through the use of a handheld computing
9 device?

10 A. No, not at all.

11 Q. Can you tell us why not?

12 A. Well, the most important reason is that the term mobile
13 device or handheld computing device does not appear anywhere
14 in the original applications that were filed in 2006.

15 Q. One of the things we've looked at during the course of
16 this trial has been figure 1. Would you look at figure 1 from
17 the three 2006 patents with me, please?

18 A. Yes, sir.

19 MR. STONE: If we can go two slides, I think. One
20 more.

21 Q. (BY MR. STONE) What is depicted here in figure 1 in this
22 case, the '681 Patent, Doctor Kia?

23 A. Yes, sir. So this is -- figure 1 shows a user of the
24 account owner 110 operating the element 111, which is
25 identified in the disclosure as the general purpose computer,

1 and it's in communication using that lightning bolt to the
2 image capture device, a separate entity 112.

3 The general purpose computer is also in communication
4 with the same type of lightning bolt with the internet, which
5 is denoted by the cloud 120.

6 Q. If the engineers at USAA had invented the use of mobile
7 phones to do remote deposit, what would you expect to see in
8 this figure or some other figure in the patent?

9 A. I would expect to see a mobile device, specifically a
10 mobile device that has an integrated camera in it that is
11 communicating with the cloud, with the lightning bolt with the
12 cloud 120.

13 Q. Would a person of ordinary skill in the art, Doctor Kia,
14 have thought that the reference to a stand-alone digital
15 camera in the patent disclosures for these patents indicated
16 that the inventors had invented using camera phones to capture
17 check images?

18 A. No, not at all.

19 Q. Did you consider figure 3 in coming to your opinions that
20 the written description requirement is not met?

21 A. Yes, sir, I have.

22 MR. STONE: Could we bring up the next slide,
23 please? Or maybe we need to go -- we need to go to PX 2 at
24 page 16. I'm sorry. Thank you, Mr. Nickels.

25 Q. (BY MR. STONE) Doctor Kia, what we see on -- displayed

1 is PX 2 at page 16, and this is figure 3. Is that right?

2 A. That's correct.

3 Q. Does this depict a mobile phone or cellular phone or
4 handheld computing device?

5 MR. SHEASBY: Objection, Your Honor.

6 THE WITNESS: No, sir, it does not.

7 MR. SHEASBY: This is not in his report.

8 THE COURT: What's your response to the objection,
9 counsel?

10 MR. STONE: He reviewed all of the figures and
11 specifications and testified that he did not see any
12 references to any handheld device or mobile device. That's
13 throughout his report.

14 This was a figure that we were pointed to by one of
15 USAA's witnesses, and so I'm specifically asking him about
16 this figure. This is included in the specifications as to
17 which he gave opinions as to everything in those
18 specifications.

19 MR. SHEASBY: Your Honor, he did not in his report
20 say that figure 3 did not disclose integrated device.

21 THE COURT: I understand.

22 MR. STONE: He discusses -- it's also at paragraph
23 89 where he does discuss figure 3 specifically.

24 MR. SHEASBY: He can say what's in paragraph 89,
25 Your Honor. We do not object to that.

1 MR. STONE: Your Honor, this is within the scope of
2 all of the conclusions in his report, including his general
3 conclusions.

4 THE COURT: I'm sorry, Mr. Stone. You can't just
5 end a report of an expert with a conclusion and then anything
6 you want to put before the jury that's not expressly included
7 in that report say it's within the scope of the conclusions.
8 That's not adequate notice.

9 I'm going to sustain the objection.

10 MR. STONE: Thank you.

11 Q. (BY MR. STONE) In your report, Doctor Kia --

12 MR. SHEASBY: Just for clarification, his answer we
13 request be struck, but his answer also --

14 THE COURT: I'll strike his answer to the question
15 as part of the ruling. Let's proceed.

16 Q. (BY MR. STONE) In your report, Doctor Kia, you describe
17 figure 3 as a schematic illustration of an exemplary image
18 capture device architecture. Is that correct?

19 A. Yes, sir, that's correct.

20 Q. And in here you say it shows -- it has its own processor
21 and memory. Correct?

22 A. Yes, sir, that's correct.

23 Q. Thank you.

24 I want to go to your next topic if we -- oh, let me
25 conclude with this topic. Sorry, Doctor Kia.

1 Have you reached a conclusion as to whether the
2 disclosures in the three 2006 patent applications that are at
3 issue here, the two 2006 patent applications that are at issue
4 here, reveal that the engineers at USAA had invented a remote
5 deposit system using a mobile device with a camera to someone
6 of ordinary skill in the art reading the applications or -- at
7 that time?

8 A. No. One of ordinary skill in the art would not
9 understand that the inventors had invented this system.

10 Q. And in your opinion, Doctor Kia, is the invention of a
11 use of a mobile phone to capture check images for use in a
12 remote deposit system, is that described in the 2006 patent
13 applications?

14 MR. SHEASBY: Your Honor --

15 THE WITNESS: We --

16 MR. SHEASBY: I object as to the reference to mobile
17 phone. The claims don't say mobile phone. They say mobile
18 device.

19 MR. STONE: I think they say a handheld mobile
20 device and let me rephrase.

21 THE COURT: That's fine.

22 Q. (BY MR. STONE) Doctor Kia, are the 2006 patent
23 applications in your opinion ones that disclose to a person of
24 ordinary skill in the art that the USAA engineers had invented
25 a remote deposit system that allowed the use of handheld

1 computing devices to capture check images for deposit into a
2 remote deposit system?

3 A. In my opinion, no, it does not.

4 Q. Thank you, Doctor Kia.

5 Let's go to your next slide, if we can, and your third
6 and final opinion, if we can. Let me ask you about --

7 A. Yes, sir.

8 Q. -- lack of enablement, if that's okay with you.

9 A. Yes, sir.

10 Q. Does this -- this relates to what you show here to the
11 '571 Patent. Is that correct?

12 A. That's correct. Also referred to as the auto-capture
13 patent.

14 Q. And can we go to your next slide?

15 Does this set out an exemplary claim from the '571
16 Patent?

17 A. Yes, sir. It is a mobile device taking a picture of a
18 check for deposit, and it says that a mobile device would
19 monitor an image of the check in a field of view of a camera
20 of a mobile device and capture the image of the check with a
21 camera when the image of the check passes the monitoring
22 criterion.

23 Q. And does the -- when was the '571 Patent applied for?

24 A. It was applied for in August of 2009.

25 Q. And does it contain a list of various monitoring

1 criterion?

2 A. Yes, sir. In the disclosure, it has a long list of
3 criterion.

4 Q. Can we go to your next slide?

5 And what does this tell us -- did the Court order what
6 the construction of the phrase 'passes the monitoring
7 criterion' would be?

8 A. Yes, sir. The Court has ordered that the term 'passes
9 the monitoring criterion' to mean determining that a
10 particular monitored criterion is in a pre-determined range.

11 Q. Did you determine whether or not the -- did you determine
12 what the challenges would be to somebody in developing an
13 auto-capture system as of 2009?

14 A. Yes, sir, I have.

15 Q. Could we go to your next slide, please, Doctor Kia?

16 Is this the list of the monitoring criterion you
17 mentioned earlier?

18 A. Yes, sir. This lists the monitoring criterion that in
19 the written description is basically a long list of criteria
20 that addresses image quality --

21 Q. Sorry, Doctor Kia. Can we go -- I didn't mean to
22 interrupt you, but I just needed a yes or no to that question.

23 A. Sorry.

24 Q. Can we go to your next slide, please, Doctor Kia.

25 Does this summarize the challenges of implementing an

1 auto-capture system as of 2009?

2 A. Yes, sir. Combination of the monitoring criterion that
3 one of ordinary skill in the art needs to determine and then
4 the appropriate ranges to apply for the selected criterion.

5 Q. And how difficult was it in 2009 to solve these two
6 challenges?

7 A. It was extremely difficult.

8 Q. Does the specification of the '571 Patent describe what
9 combination of monitoring criteria should be applied to obtain
10 a check image that can be deposited in a remote deposit
11 system?

12 A. No, sir, it does not.

13 Q. Does the patent specification describe what are the
14 appropriate ranges or pre-determined ranges for the selected
15 criteria to achieve an acceptable check image for deposit in a
16 remote deposit system?

17 A. No, sir, there is no pre-determined ranges specified in
18 the specification on the patent.

19 Q. And does the '571 Patent application or specification
20 disclose any working examples of how one might implement
21 auto-capture?

22 A. No, there is no working example.

23 Q. Did USAA engineers have to engage in a period of
24 experimentation to implement the auto-capture functionality
25 that is described in the '571 Patent application?

1 A. Yes, sir. As we heard from Mr. Bueche's testimony just
2 earlier that they had to do work on thousands and thousands of
3 images were his words to come up with a set of algorithms that
4 can do this.

5 Q. Let me go to the next slide, if we might, Doctor Kia.

6 What is depicted on this slide, which is page 3 of DX
7 1263?

8 A. Yes. Based on evidence, sometime in 2012 the current
9 status of the auto-capture was presented, and at the time it
10 was called the hover capture process. And this is a block
11 diagram, very, very high block diagram of the process as of
12 that time.

13 Q. And if we go to the next slide, what have you highlighted
14 here?

15 A. So since this is a very high-level block diagram, I
16 extracted sections of it to show what they're attempting to
17 do, and it is important to know that this is very high level
18 and each one of those boxes contains their own algorithms that
19 are also very -- very difficult to come -- come by.

20 Q. If we go to your next slide, what do we see on this one?

21 A. So this is the algorithm for the green box in the
22 previous side. It was antishake, and it's a criteria that
23 USAA applied to determine if the phone is moving in an attempt
24 to guarantee that the image is of a higher quality.

25 Q. Did the '571 Patent application or specification disclose

1 any of the algorithms that you have just shown us from DX
2 1263?

3 A. No, they do not describe the hover capture and they do
4 not describe any of the highlighted sections that -- that I
5 show.

6 Q. Did it disclose anything to do with an antishake
7 algorithm?

8 A. No, there was no antishake algorithm disclosed in the
9 disclosure.

10 Q. When was it that USAA finally launched the Deposit@Mobile
11 service?

12 A. Finally they launched it in May of 2013.

13 Q. In your opinion, Doctor Kia, in light of the challenges
14 that you've summarized in implementing the invention that is
15 claimed in the '571 Patent, the state of the art as of 2009,
16 the amount of guidance that is provided in the application for
17 that patent, and the amount of experimentation that was
18 required to implement it, what is your opinion as to whether
19 or not the claims of the '571 Patent satisfy the enablement
20 requirement?

21 A. Yes. So looking at all of the evidence and considering
22 all the factors, my opinion that the claims of the '571 Patent
23 are not enabled.

24 Q. Thank you, Doctor Kia.

25 MR. STONE: Pass the witness, Your Honor.

1 THE COURT: Cross-examination?

2 MR. SHEASBY: Yes, Your Honor.

3 THE COURT: Please proceed. Proceed when you're
4 ready, Mr. Sheasby.

5 MR. SHEASBY: Thank you, Your Honor.

6 CROSS-EXAMINATION

7 BY MR. SHEASBY:

8 Q. Good morning, Doctor Kia.

9 A. Good morning, sir.

10 Q. It's nice to see you again.

11 A. Likewise.

12 Q. We've spoken before?

13 A. Yes, sir, we have.

14 Q. Now, the standard to prove that a patent is invalid is
15 clear and convincing evidence. Correct?

16 A. I would agree with that, yes.

17 Q. PNC has the sole burden to prove invalidity by clear and
18 convincing evidence. Correct?

19 A. That's my understanding, yes.

20 Q. Now, Professor Kia, when we spoke last, before you were
21 hired by PNC's lawyers, you could not recollect ever having
22 analyzing a patent to determine if it was enabled or satisfied
23 written description. Correct?

24 A. I believe I have never done that. And it's Doctor Kia,
25 not Professor Kia.

1 Q. I'm sorry, Doctor Kia. To me, you'll be Professor Kia
2 always.

3 A. Okay. Thank you.

4 Q. So just to be clear, before you were hired by PNC's
5 lawyers, you had never performed an analysis of written
6 description or enablement. Correct?

7 A. That sounds correct, yes.

8 Q. Before you were hired by PNC's lawyers, and, in fact,
9 through the time of your expert reports and deposition, you
10 had never actually spoken to a living individual who had built
11 a mobile remote deposit capture system. Correct?

12 A. That sounds correct. I can't classify a living person,
13 but I don't understand what you mean by that, but generally
14 that's correct.

15 Q. What I mean by living person is someone who's alive,
16 someone that you actually spoke to, someone that you
17 interacted with. You never spoke to any human being that's
18 actually built a mobile remote deposit capture system.
19 Correct?

20 A. Yes, that's correct.

21 Q. And enablement and written description are patent law
22 concepts. Correct?

23 A. Yes, sir, those are correct.

24 Q. And the patent examiners would be more knowledgeable than
25 you in terms of applying patent law to United States -- to the

1 USAA applications. Correct?

2 A. Yes, sir, they would know more about the law. I would
3 know more about the science and technology.

4 MR. SHEASBY: I move to strike the last portion of
5 the answer as non-responsive, Your Honor.

6 THE COURT: Sustained.

7 Try to limit your answers to the questions asked, Doctor
8 Kia.

9 THE WITNESS: Yes, sir.

10 THE COURT: Let's proceed.

11 Q. (BY MR. SHEASBY) And, in fact, there are five patents at
12 issue in this case. Correct? Four, excuse me. There are
13 four patents at issue in this case.

14 A. Yes, sir, four.

15 Q. Which means that it's your testimony to the ladies and
16 gentlemen of the jury, that at least four United States patent
17 examiners got it wrong. Correct?

18 A. Yes, sir.

19 Q. And they didn't just get it wrong once because validity
20 has to proceed by analyzing each and every claim separately.
21 Correct?

22 A. That's correct.

23 Q. You showed the ladies and gentlemen of the jury a grand
24 total of one patent claim in your presentation. Correct?

25 A. That is correct, sir.

1 MR. SHEASBY: And if we go to PDX 13.37, Mr. Huynh.

2 Q. (BY MR. SHEASBY) These are the separate independent
3 inventions. Each claim is a USAA invention. Correct?

4 A. That's correct.

5 MR. STONE: Your Honor --

6 THE COURT: Just a moment.

7 MR. STONE: -- objection. Beyond the scope of the
8 direct. Unrelated to these patents which are not the four
9 patents in this case and outside the scope of anything in his
10 report. He obviously just addressed the four patents here.

11 THE COURT: I'm not following, Mr. Stone. These
12 four patents on the screen are the four Patents-in-Suit.

13 MR. STONE: I apologize, Your Honor. My mistake. I
14 apologize.

15 THE COURT: All right. Let's proceed.

16 Q. (BY MR. SHEASBY) Each claim in the patent is treated
17 under the law as a distinct invention. Correct?

18 A. Correct.

19 Q. For the analysis of validity, we must analyze each claim
20 distinctly. Correct?

21 A. Yes, sir.

22 Q. You did not show claim 1 of the '432 Patent to the jury?

23 A. No, sir, I did not.

24 Q. You didn't show claim 3, you didn't show claim 5, you
25 didn't show claim 21. Correct?

1 A. Yes, sir, that's correct.

2 Q. And I would be giving -- you would be giving me the same
3 answers for the '681 Patent, the same answers for the '605
4 Patent. Correct?

5 A. Yes, sir, that's correct.

6 Q. And the same answers for claims 2, 9, and 12 through 13
7 of the '571 Patent. Correct?

8 A. Yes, sir, that's correct.

9 Q. Now, you have 17 of your own United States patents.
10 Correct?

11 A. Yes, sir, that sounds about right.

12 Q. And when we spoke last, you could not identify a single
13 one in which you describe a commercial embodiment of the
14 product. Correct?

15 A. That sounds about right, yes.

16 Q. And to be clear, you do not need a commercial prototype
17 in an application to satisfy enablement. Correct?

18 A. I'm sorry. I didn't understand the question. Can you
19 repeat that?

20 Q. I will absolutely repeat it, Doctor Kia. You do not need
21 a commercial prototype in a patent application to satisfy
22 enablement. Correct?

23 A. Well, I don't know how to answer that, because I don't
24 know what the commercial prototype would entail.

25 Q. You do not need a commercial embodiment in the

1 application to satisfy enablement. You just need sufficient
2 explanation for a person of ordinary skill in the art to
3 understand what to do. Correct?

4 A. That's correct, yes.

5 Q. You do not need to have an actual physical product or
6 prototype in order to satisfy written description or
7 enablement. Correct?

8 A. Well, again, that depends on what is contained in the
9 product -- the terms you just mentioned. Yeah, it depends on
10 what is disclosed to one of ordinary skill in the art. It's
11 whether he would be able to make what is claimed.

12 Q. That's exactly my point. You don't need to have a
13 physical product in order to satisfy written description or
14 enablement; you only need a description of how it would work.
15 Correct?

16 A. That's correct.

17 Q. You testified under oath that you were a person of
18 ordinary skill as defined in 2006. Correct?

19 A. That's correct.

20 Q. You believe that in 2006, before USAA even filed its
21 patents, you would have had the ability to create a system
22 that used the handheld device to capture images of checks and
23 deposit them at a bank. Correct?

24 A. I would have the capability, but I'm one of much more
25 than ordinary skill in the art, and I would be able to do it

1 after a lot of experimentation.

2 Q. Well, let's go to your deposition, Doctor Kia. You
3 should have a binder in front of you that has your deposition
4 in it.

5 A. Actually the box was delivered. I have not opened it yet
6 since you did not give me instructions to open it.

7 Q. Okay. Well, you should open it, Doctor Kia. Please do
8 so.

9 A. Okay. Excuse me one second.

10 MR. SHEASBY: And, Mr. Huynh, while he's --

11 THE WITNESS: I have deposition transcript of
12 cross-examination of Dr. Omid Kia. Is that the one?

13 Q. (BY MR. SHEASBY) Yes, sir.

14 A. Okay.

15 Q. And turn to page 139:24, to 140:20.

16 A. 139:24 to what line?

17 Q. To 140:20, sir. And actually to be more precise, it's
18 140:6 through 140:20. That will probably be a more precise
19 pin cite, sir.

20 A. Okay. Thank you. Yes, sir.

21 Q. You believe that in 2006, before USAA filed its
22 patents -- well, did you give the testimony that was
23 just -- that -- that I just read -- that you just read?

24 A. Yes, I did give that testimony, and I stand by it, yes.

25 Q. You believe that in 2006 before USAA filed its patents,

1 you would have had the ability to create a system that uses a
2 handheld device to capture images of checks and deposit them
3 at a bank. Correct?

4 A. Yes, sir.

5 Q. And in 2006, you were a person of ordinary skill as
6 defined in the 2006 patent. Correct?

7 A. Actually, I exceeded those in 2006 still.

8 Q. Okay.

9 MR. SHEASBY: So why don't we pull up right now
10 lines 18 through -- 140, lines 6 through 140, lines 20, Mr.
11 Huynh.

12 MR. STONE: No inconsistency, Your Honor.

13 THE COURT: Pull the deposition off the screen,
14 please.

15 MR. SHEASBY: Pull it off, Mr. Huynh.

16 THE COURT: What's the basis to publish this to the
17 jury, given his answers, Mr. Sheasby?

18 MR. SHEASBY: At deposition under oath, he testified
19 without qualification he was a person of ordinary skill --

20 MR. STONE: I'm --

21 MR. SHEASBY: Well, I am happy to do it at sidebar,
22 Your Honor.

23 THE COURT: You're telling me -- well, you're
24 telling me there's an inconsistency between his testimony in
25 the deposition and testimony today.

1 MR. SHEASBY: Absolutely, Your Honor.

2 THE COURT: All right. Well, I'll let you publish
3 it to the jury and let the jury decide.

4 MR. STONE: Thank you, Your Honor.

5 Q. (BY MR. SHEASBY) Question: "In 2006 before USAA filed
6 its patents, would you have the ability to create a system
7 that used a handheld device to capture images of checks and
8 deposit them at a bank?

9 "When you're asking you, you're asking me personally.

10 "Yes, sir.

11 "Well, I was not tasked or I was not in a situation that
12 would require me to develop it, but if I -- if I were, I
13 believe I could do it, yes.

14 "You were a person of ordinary skill, as you defined it,
15 in 2006."

16 Answer: "Yes."

17 Did I read your testimony correctly, Doctor Kia?

18 A. Yes, sir, you did.

19 Q. Now, in 2006, you had never built a mobile remote deposit
20 capture system. Correct?

21 A. That's correct.

22 Q. And in 2006, you had never designed a mobile
23 remote -- excuse me. In 2006, you could not identify one
24 downloaded application that you have created that was released
25 to consumers for use on a consumer mobile device. Correct?

1 A. That's correct.

2 Q. Never built a mobile remote deposit capture system, never
3 launched a commercial application on mobile devices. Correct?

4 A. I believe you said in 2006, yes, that's correct.

5 Q. And in 2006, you had the ability to create a system that
6 used a handheld device to capture images of checks and deposit
7 them at a bank. Correct?

8 A. That's correct with my understanding, yes.

9 Q. Now, one of the statements you made to the jury was that
10 in 2006, there were not handheld devices with cameras that had
11 sufficient resolution to capture financial documents.

12 Correct?

13 A. Not sufficient resolution and also quality of images,
14 that's correct.

15 Q. The reality is that in 2006, Nokia phones, for example,
16 and camera-equipped mobile phones could take photos of
17 financial documents, identify digital codes imprinted on them,
18 and transmit the information. Correct?

19 A. I don't understand where you're reading that from. Is
20 that -- where is that coming from? I don't understand.

21 Q. Sir, before 2006, nokia phones, camera-equipped mobile
22 phones can take photos of financial documents, identify
23 digital codes imprinted on them, and transmit the information.
24 Correct?

25 A. Yes, that's correct. I think your audio went out. Yes,

1 that's correct.

2 Q. So for the ladies and gentlemen of the jury, before 2006,
3 camera-equipped mobile phones had the capability to take
4 pictures of financial documents, identify digital codes, and
5 transmit that data to banks. Correct?

6 A. Yes, sir, that's correct.

7 Q. Now, you stated that it took approximately two years for
8 USAA to release its optimized application for the iPhone.
9 Correct?

10 A. It took -- well, there was two parts I mentioned. One
11 was the prototype, one was a release to customers. Which one
12 of those are you referring to?

13 Q. Sir, you testified that it took two years for USAA to
14 release its optimized application for iPhone. Correct?

15 A. That's correct, yes, sir.

16 Q. The application, you heard from Mr. Prasad and Mr.
17 Wilkinson, was the number one banking application on the Apple
18 iStore when it was released. Correct?

19 A. I didn't -- did not form any opinion on that. I do not
20 know.

21 Q. You heard Mr. Wilkinson and Mr. Prasad testify to that
22 under oath. Correct?

23 A. That's correct. I heard them testify to that effect.

24 Q. Does the United States patent law require you to put in
25 your application the number one application for iPhone banking

1 apps in order to satisfy the validity standard?

2 A. No, not at all, sir.

3 Q. And the question, and I think you said this to the ladies
4 and gentlemen of the jury, you said the question to be
5 answered is whether the amount of experimentation to create a
6 working system, just a working system, could not have been
7 undue. Correct?

8 A. That's correct.

9 Q. Now, you've done some projects. Correct?

10 A. Yes, sir, I have.

11 Q. And you agree that USAA shouldn't be held to any higher
12 standard than you're held to or anyone else is held to.
13 Correct?

14 A. Yes, sir, that's correct.

15 Q. For example, when you were a graduate student, Nokia
16 approached your advisor asking you about a camera on a phone
17 for video conferencing, and your part involved working on the
18 video codec and interface with the camera. Correct?

19 A. Yes, sir, that's correct.

20 Q. You worked on a proof of concept project for Nokia, and
21 just your part of that project took two to three years.
22 Correct?

23 A. The entirety of the project, yes. It sounds about the
24 right portion.

25 Q. Sir, your part alone took two to three years. Correct?

1 A. That's correct.

2 Q. In your report, you don't describe your project for Nokia
3 as undue experimentation. Correct?

4 A. No, sir, I don't. I --

5 Q. Thank you.

6 A. -- don't -- okay.

7 Q. You also worked on another project to enable video to be
8 served on mobile devices. Correct?

9 A. Yes, sir.

10 Q. And just your portion of that project took roughly two
11 years. Correct?

12 A. That's correct, yes, sir.

13 Q. Another project you worked on as a member of a team was
14 using video on mobile phones to make more accurate, more on
15 time weather notifications. Correct?

16 A. Yes, sir, that's correct.

17 Q. From the time you pitched the idea to the time you left
18 the company and it wasn't even done yet, you worked on it for
19 two years and then other members of the team worked on it for
20 another two or three years. Correct?

21 A. Yes, that's my understanding.

22 Q. And you implemented a voice recognition system that would
23 run on mobile phones for health records. It never even
24 reached commercialization, but it took you two years to
25 implement that app. Correct?

1 A. That's almost correct. I'm not sure if I can classify it
2 as voice -- voice recognition, but maybe voice classification.
3 It's similar.

4 Q. It took you two years, and you didn't even reach full
5 commercialization. Correct?

6 A. Yes, sir, that's correct.

7 Q. You didn't discuss any of those projects with the ladies
8 and gentlemen of the jury. Correct?

9 A. That's correct, I did not.

10 Q. And in your report you don't identify any of those
11 projects as being undue experimentation. Correct?

12 A. Yes, sir, I don't.

13 Q. And you filed patents on some of those projects.
14 Correct, sir?

15 A. I filed patents after I found out how to do it and how to
16 describe it to the others. I didn't do it before the undue
17 experimentation. I did it after I finished my
18 experimentation.

19 Q. You filed your patent applications at the end of the
20 commercial development of your projects?

21 A. No, sir.

22 Q. Thank you.

23 Now, you also showed the ladies and gentlemen of the jury
24 PX 1409.

25 MR. SHEASBY: And let's pull that up, PX 1409.

1 Q. (BY MR. SHEASBY) This is a presentation you showed to
2 the jury. Correct?

3 A. Yes, sir, that's correct.

4 MR. SHEASBY: And let's scroll down, Mr. Huynh. One
5 more. One more. One more. One more. One more. One more.
6 One more. Keep going. You'll get there. Keep going. Keep
7 going. Right there. Thank you.

8 Q. (BY MR. SHEASBY) You showed this document and you said
9 in 2007 of December, USAA's system was working only 25 percent
10 of the time. Correct?

11 A. That's not exactly accurate, no.

12 Q. You said the MICR information was only being read 20
13 percent of the time as of the date of this document. Correct?

14 A. That's not entirely accurate, no.

15 Q. And it's not entirely accurate because, in reality, at
16 the time of this document, if you turn to the next page, the
17 MICR reading was a hundred percent successful as of the time
18 of this document. Correct?

19 A. That's not what I think is entirely accurate, but I
20 understand that, after that, they reported that they did a
21 MICR reading of a hundred percent after they tried to fix one
22 of the OCR engines.

23 Q. Well, to be clear, why don't we pull up Mr. Prasad's
24 deposition -- testimony under oath earlier this week. It's
25 day 2, page 298, lines 5 through 10?

1 MR. STONE: Your Honor, I object to the use of the
2 transcripts in accordance with the Court's prior direction. I
3 think it's an improper use of them.

4 MR. SHEASBY: Your Honor, I believe I am entitled to
5 refer to any evidence that was in record in this case. This
6 is not a deposition.

7 THE COURT: You can certainly refer to it. I don't
8 know that there's a basis for you to publish it in written
9 form.

10 MR. SHEASBY: Well, Your Honor, I'm impeaching his
11 recollection based on what Mr. Prasad testified.

12 THE COURT: You can't impeach him with a prior
13 statement of another person. It's not inconsistent.

14 Q. (BY MR. SHEASBY) The ladies and gentlemen of the jury,
15 when they deliberate, they can determine whether Mr. Prasad
16 testified that, as of the date of this document, the MICR line
17 was being read a hundred percent of the time. Correct?

18 A. I don't know how to answer that question for you, because
19 as of the date that the previous page was published, it's
20 recorded that there was only 25 percent success rate in the
21 MICR line read.

22 Q. And the next page, Mr. Prasad testified there was a
23 hundred percent. Correct?

24 A. Are we looking at that page? A hundred percent -- are we
25 talking about a hundred percent of the five samples?

1 Q. I think you've answered the question sufficiently, Doctor
2 Kia. Thank you.

3 Now, the -- in October 31st of 2006, USAA filed mobile
4 phone check image patent applications. Correct?

5 A. I don't understand how to classify your question.

6 Q. The patent applications -- I'm happy to clarify, Doctor
7 Kia. I appreciate it.

8 A. Thank you. Yes.

9 Q. In October 31st of 2006, the patent applications that
10 USAA filed were for mobile phone check images. Correct?

11 A. Again, I don't understand the mobile phone classification
12 for that. I know that USAA filed applications which I
13 referred to as the 2006 patents, October 31, 2006.

14 Q. And those are the mobile phone check image patent
15 applications. Correct?

16 A. Yes. So later on when mobile phones were introduced as
17 claims, yes, they became the mobile phone remote deposit check
18 applications.

19 Q. Well, in 2006, they were the USAA mobile phone check
20 image patent applications. Correct?

21 A. Again, I don't understand your classification with mobile
22 phone.

23 Q. Okay.

24 MR. SHEASBY: Why don't we pull up DDX 1.49.

25 And I can show it on the elmo if you are having trouble,

1 Mr. Huynh. Are you ready? It's the Defendant's
2 demonstratives. We'll come back to that.

3 Can we go back to the screen for Professor -- Doctor Kia?

4 Q. (BY MR. SHEASBY) There you are. Welcome back, Doctor
5 Kia.

6 A. Thank you. Good to be back.

7 Q. The second issue you spoke about was what you call
8 'written description'. You're saying, and I wrote your words
9 down, you would expect to have seen a description of the
10 integrated device with a camera in it in the 2006 application.
11 Correct?

12 A. Yes, sir, that's correct.

13 Q. And your counsel showed you figure 3 from that
14 application. Correct?

15 A. Yes, sir, that's correct.

16 MR. SHEASBY: Let's go to Prasad demonstratives,
17 page 12.

18 Q. (BY MR. SHEASBY) So this is figure 3 from PX 002, which
19 is the '605 Patent. Correct?

20 A. Yes, sir, that's correct.

21 Q. And the ladies and gentlemen of the jury can go back and
22 look at this figure in their deliberations. Correct?

23 A. Yes, sir, that's correct.

24 Q. Figure 3 of the '605 Patent is described as a schematic
25 -- in your report -- let me stop this.

1 Mr. Stone read a portion of your report discussing this
2 figure to you in his examination of you. Correct?

3 A. Yes, sir, I recall that.

4 Q. He didn't read the entire portion of what was in your
5 report discussing this figure, did he?

6 A. No, he did not read the entire report or a portion of the
7 report.

8 Q. The entire portion of the report discussing figure 3 of
9 the '605 Patent states as follows: "Figure 3 of the '605
10 Patent described as a schematic illustration of an exemplary
11 image capture architecture"--and these are your words, Doctor
12 Kia--"shows a self-contained device with its own processor and
13 memory."

14 Correct?

15 A. That sounds correct, yes.

16 Q. Let's turn now to the '571 Patent. Your testimony was,
17 once again, the Patent Office got it completely wrong and the
18 monitoring criteria that are listed in the '571 Patent would
19 not teach a person of ordinary skill in the art how to just
20 even make a system that even worked once. Correct?

21 A. Well, I mean, making the system is paramount. One of
22 ordinary skill in the art is supposed to be able to make the
23 system.

24 Q. Sure. And your testimony is that a person of ordinary
25 skill in the art would not be able to do that. Correct?

1 A. That's correct, yes, sir.

2 Q. Okay.

3 MR. SHEASBY: Let's go to Conte PDX 5.101. Go up.

4 One more. There. Great. Go down one.

5 Q. (BY MR. SHEASBY) In the system that was created by PNC
6 that is accused of infringing the claims at issue in this
7 case, you heard Doctor Bovik admit and Professor Conte testify
8 that the infringing system uses every single one of the
9 monitoring criteria listed in USAA's patents. Correct?

10 A. I heard that testimony; yes, that's correct.

11 Q. There is no reference to PNC using antishake. Correct?

12 A. I do not recall them talking about it. I did not perform
13 an infringement analysis or analyze the patent in that regard,
14 no.

15 Q. It would be fair that the ladies and gentlemen of the
16 jury, when weighing the credibility of your testimony, can
17 take into account that the monitoring criteria used by PNC are
18 the verbatim criteria expressly set out in the patent.
19 Correct?

20 A. Well, I'm sorry, but I did not analyze PNC product
21 against the claims. I did not form any opinion of what the
22 PNC products do.

23 Q. I understand that, Doctor Kia. The ladies and gentlemen
24 of the jury, as a matter of common sense when weighing your
25 opinion, can take into account that PNC's infringing product

1 uses verbatim every single one of the monitoring criteria
2 listed in the '572 [sic] Patent. Correct?

3 A. Well, again, almost the same answer. I just listened to
4 the testimony. I did not analyze the PNC product of what it
5 does, what it doesn't do. I formed no opinion on that.

6 MR. SHEASBY: Your Honor, may I approach counsel
7 table briefly?

8 THE COURT: You may.

9 Q. (BY MR. SHEASBY) Doctor Kia, who in my heart will always
10 be Professor Kia, thank you for your time.

11 MR. SHEASBY: I pass the witness.

12 THE WITNESS: Thank you, sir.

13 THE COURT: All right. Is there redirect,
14 Mr. Stone?

15 MR. STONE: Yes, Your Honor. Thank you.

16 THE COURT: Approach the bench briefly, counsel.

17 (The following was had outside the hearing of the
18 jury.)

19 THE COURT: What do you estimate the time of your
20 redirect to be?

21 MR. STONE: Seven minutes at most.

22 THE COURT: Will you have additional cross?

23 MR. SHEASBY: Highly unlikely.

24 THE COURT: Because we're coming up on two hours,
25 and if we're going to go much longer, I need to give the jury

1 a recess.

2 MR. STONE: I mean, if I hit 10 minutes, I would be
3 very surprised.

4 THE COURT: All right. Let's go.

5 (The following was had in the presence and hearing
6 of the jury.)

7 THE COURT: All right. Let's proceed with redirect
8 by the Defendant.

9 REDIRECT EXAMINATION

10 BY MR. STONE:

11 Q. Doctor Kia, can we bring up your demonstrative DX 7.6?
12 It will come up on the screen in front of you, I think.

13 A. Oh, okay. Thank you.

14 Q. Would you tell the ladies and gentlemen of the jury what
15 background in terms of education and experience a person of
16 ordinary skill in the art would have?

17 A. In my opinion, a person of ordinary skill in the art
18 would have a Bachelor's degree in electrical engineering,
19 computer science, computer engineering, or some related field,
20 or some similar field, plus experience -- two-plus years
21 experience in the field of image capture/scanning technology
22 involving processing and communication of image data in a
23 client and a server.

24 Q. When you were asked the question by Mr. Sheasby as to
25 whether or not you would be able to make a remote deposit

1 system that used mobile phones to capture check images, you
2 indicated that you would have been able to do that back in the
3 time frame in 2006. Right?

4 A. Yes, sir, I do recall that.

5 Q. And was that because of any information contained in the
6 2006 patents filed by USAA? Did you need any of that
7 information to be able to do that?

8 A. No. I had experience and qualifications that I could do
9 it on my own.

10 Q. And would a person of ordinary skill in the art have been
11 able to do it on their own at that time?

12 A. No, they would not.

13 Q. And is there anything that's contained in those 2006
14 patent applications that would make it possible for somebody
15 of ordinary skill in the art to have developed a working
16 system using mobile phones to capture check images at that
17 time without engaging in undue experimentation?

18 A. No, not at all. There exists no such disclosure that
19 would help out one of ordinary skill in the art to do that.

20 Q. Doctor Kia, you were asked by Mr. Sheasby about patent
21 examiners. Do you recall that?

22 A. Yes, sir, I do.

23 Q. Do you know more about science and technology in the
24 field of image processing, as you understand the
25 qualifications of patent examiners, than they do?

1 A. Yes, sir, I would qualify to know more about science and
2 technology than the patent examiner.

3 Q. And were the patent examiners who looked at the patents
4 that are asserted in this case, were they shown the -- some of
5 the exhibits that we've talked about in this case?

6 MR. SHEASBY: Your Honor, I object. It's not in his
7 report.

8 MR. STONE: Proper subject of redirect in light of
9 the cross-examination, which also went beyond the report.

10 MR. SHEASBY: I disagree with that, Your Honor.
11 This is a very -- may we have a sidebar?

12 THE COURT: If this is not in his report, it's not
13 subject to being taken up on his examination.

14 Approach the bench.

15 (The following was had outside the hearing of the
16 jury.)

17 THE COURT: Tell me how, Mr. Stone, the door's been
18 opened by --

19 MR. STONE: Because he asked him about the patent
20 examiners and asked him whether the fact that there's four
21 patent examiners that reviewed this, that they had all the
22 information they needed, trying to get a sort of super
23 presumption of validity out of the testimony that there were
24 four patent examiners, an issue we've already argued. But,
25 most importantly, that these patent examiners didn't have the

1 information that this jury has, and that's the point I want to
2 make.

3 MR. SHEASBY: He has no factual basis to find that.
4 That is not in his report. That's exactly my point.

5 MR. STONE: Nor was the basis for the cross.

6 MR. SHEASBY: What was in front of the examiners is
7 not in his report, and I can tell you it's going to open up a
8 can of worms because there was a lot of material --

9 THE COURT: I don't need any more explanation.
10 We're not going to go there if it's not in his report. I
11 don't think that what Plaintiff elicited on direct opens the
12 door to challenging what the examiners would have before them.

13 MR. STONE: Thank you, Your Honor.

14 MR. SHEASBY: Thank you, Your Honor.

15 (The following was had in the presence and hearing
16 of the jury.)

17 THE COURT: All right. Objection sustained.

18 Let's proceed.

19 Q. (BY MR. STONE) Doctor Kia, with respect to your projects
20 that you were asked about by Mr. Sheasby and your patents that
21 you were asked about by Mr. Sheasby, did -- when did you file
22 the patent applications that resulted in the patents that he
23 asked you about?

24 A. All of my patents were triggered by event of me being
25 able to describe in a way that would work. So I waited till I

1 did enough experimentation, enough research, I knew how to
2 make the device, and I would be able to describe how I would
3 make the device before I filed any application.

4 Q. Thank you.

5 MR. STONE: No further questions, Your Honor.

6 THE COURT: You pass the witness?

7 MR. STONE: I do. I pass the witness.

8 THE COURT: Is there further cross-examination?

9 MR. SHEASBY: No, Your Honor. No further
10 cross-examination.

11 THE COURT: All right. Doctor Kia, that completes
12 your testimony. We thank you for your participation.

13 THE WITNESS: Thank you, sir. It was a pleasure.

14 THE COURT: Ladies and gentlemen of the jury, we're
15 going to take a recess at this time. If you will, simply
16 close your notebooks and leave them there in your chairs,
17 follow all my instructions, including not to discuss the case
18 with each other, and we'll be back shortly to continue.

19 The jury's excused for recess.

20 (Whereupon, the jury left the courtroom.)

21 THE COURT: Be seated, please.

22 Counsel, for your information, Plaintiff has remaining
23 2 hours and 43 minutes, Defendant has remaining 2 hours and 28
24 minutes.

25 I'd like you to take a short break, and then I'd like to

1 see lead and local counsel in chambers.

2 Court stands in recess.

3 (Brief recess.)

4 THE COURT: Be seated, please.

5 Mr. Stone, is the Defendant prepared to call its next
6 witness?

7 MR. STONE: We are, Your Honor.

8 THE COURT: And that witness will be?

9 MR. STONE: With the Court's permission, Mr. Lantier
10 is handling the depositions, but it will be Mr. Charles Oakes.

11 THE COURT: All right. If you will, Mr. Lantier,
12 when you identify these deposition witnesses, go ahead and
13 give us the time splits at that time.

14 MR. LANTIER: Yes, sir.

15 THE COURT: All right. Let's bring the jury in,
16 please, Mr. Fitzpatrick.

17 (Whereupon, the jury entered the courtroom.)

18 THE COURT: Please have a seat, ladies and
19 gentlemen.

20 Defendant, call your next witness.

21 MR. LANTIER: The next witness is Charles Oakes, who
22 at the time of his deposition was the former IT director of
23 research and development at USAA.

24 The time breakdown is PNC, 1 minute, 57 seconds; USAA, 5
25 minutes, 5 seconds.

1 THE COURT: Proceed with this witness by deposition,
2 please.

3 CHARLES OAKES, SWORN, BY VIDEOTAPE DEPOSITION,

4 Q. Will you please state your name for the record?

5 A. Charles Oakes.

6 Q. And USAA is your current employer. Correct?

7 A. No, I'm retired from USAA.

8 Q. When did you retire, sir?

9 A. April 1st, 2016. It's been over three years.

10 Q. And what have you been doing in your retirement?

11 A. Playing golf, teaching golf. I teach junior golf at my
12 church. Doing ministry work with my church. Doing a lot of
13 reading and gardening and enjoying retirement life.

14 Q. As of October 25, 2006, would Deposit@Home and the
15 Deposit@Home product only work with devices that were
16 associated with TWAIN drivers?

17 A. We knew that any type of device that we would be able to
18 capture an image, would be able to be processed through the
19 Deposit@Home system. The reason for that, it was just an
20 image.

21 Whether you use a camera without a TWAIN driver, or if
22 you use a web cam, if you use video, use the scanner itself,
23 TWAIN drivers at that point in time, we knew that any type of
24 image that we could capture could go through our system.

25 Q. Do you recall why in this email you called out the fact

1 that a TWAIN driver was used?

2 A. I don't really recall, other than it -- because Mike
3 Morris was the one who saw it at first, and that's
4 where -- the possibility of where I came up with a TWAIN
5 driver. We know there had to be a TWAIN driver because of the
6 model of the -- of the webcam.

7 Q. In October of 2006, there wasn't any active project at
8 USAA that involved using a camera phone to capture a check
9 image. Correct?

10 A. There wasn't a development project, but we were working
11 on a project in research. There is a difference between the
12 two.

13 Q. Prior to October 2006, had USAA done any research using a
14 camera phone, not a normal digital, like, Canon camera, to
15 capture an image of a check?

16 A. We were looking -- there were cameras -- camera phones at
17 that point in time. There was like the Simian, there was
18 the Nokia-type devices that we were starting to take a look at
19 to see what we could do in a mobile world.

20 Q. So prior to that October 2006 email, what, if any, work
21 in research had USAA done on mobile phones and their ability
22 to take an image of a check?

23 A. Well, again, we were -- we were looking at the various
24 phones that were available at that time to determine what it
25 was going to be able to take to be able to capture an image

1 and to be able to control that image and to be able to pass it
2 on.

3 Q. Do you recall whether prior to that email, anyone at USAA
4 had actually taken a check image with a mobile phone camera?

5 A. That, I don't recall if we could or not at that point in
6 time. Let me -- let me clarify -- can I clarify that or not?
7 Well, as far as being able to take a picture using a check on
8 a mobile phone, that wasn't the issue. It was the issue was
9 being able to get the image off of the phone in a way that we
10 could process it downstream.

11 So I thought that's what your question was. I may have
12 misunderstood it.

13 Q. Prior to October 2006 to this email --

14 A. Uh-huh.

15 Q. -- my question is, do you recall anyone at USAA actually
16 taking a picture of a check using a mobile phone camera?

17 A. In the research area, being able to take a picture of a
18 check?

19 Q. Yes.

20 A. Yes, but not processing it.

21 Q. So you recall folks in your research area taking a
22 picture of a check using a mobile phone camera prior to
23 October 2006.

24 A. Yes, I do remember that. Taking a picture, but not
25 processing it. You can take a picture of anything with the

1 mobile phones that were out during that time period.

2 Q. So prior to October 2006, USAA had done -- had not done
3 any work on processing an image of a check taken with a mobile
4 phone. Correct? Is that fair?

5 A. As far as processing it through the entire application at
6 that point in time, no, other than the one October in 2006 --

7 Q. Which was a webcam?

8 A. -- that I remember, which was a webcam. That's true.

9 Q. So is it fair to say that the Deposit@Home patents, the
10 2006 patents, claim a specific way to do remote check deposit
11 using consumer electronics? Is that fair?

12 A. In the specifications associated on gives us a blueprint
13 of using image type of -- capture types devices to be
14 able -- from a consumer standpoint, to be able to deposit a
15 check.

16 Q. If an engineer read your patents, the specifications,
17 would they understand how to build a mobile deposit system
18 using your inventions?

19 A. The specifications on there is -- again, is a blueprint
20 on how to build it.

21 THE COURT: Does that complete this witness by
22 deposition?

23 MR. LANTIER: Yes, Your Honor.

24 THE COURT: Call your next witness, please.

25 MR. LANTIER: PNC calls Nathan McKinley, who at the

1 time of his deposition was vice president corporate
2 development at USAA.

3 The run time for PNC is 4 minutes and 21 seconds, and the
4 run time for USAA is 4 minutes and 16 seconds.

5 THE COURT: Please proceed with this witness by
6 deposition.

7 NATHAN McKINLEY, SWORN, BY VIDEOTAPE DEPOSITION,

8 Q. Can you please state your name for the record?

9 A. Sure. It's Nathan McKinley.

10 Q. You're employed by USAA?

11 A. Yes, ma'am.

12 Q. Why is that?

13 A. Well, I -- I view banks who actively market military as
14 our top competitors. And so I -- when I look at this list,
15 Navy Federal Credit Union, I would say top competitor.

16 Pentagon Federal, top competitor. PNC Bank, top competitor.

17 People who actively target the military, I view them as a top
18 competitor.

19 Q. Is there an industry standard for calculating the cost to
20 process a deposit at a teller window?

21 A. Well, we have looked at a few studies such as -- like the
22 Javelin study from 2013 puts the deposit at \$4.25 for a teller
23 window.

24 And then there's another study that was done by Jack
25 Henry for ProfitStars, and that puts the deposit at a teller

1 window of \$4. And so it does seem a little light to me on
2 the -- on the \$1.40.

3 Q. But what you cannot tell me is that mobile remote deposit
4 capture is the reason why those people have more products.
5 Correct?

6 A. I can only tell you the data that I've got, and the data
7 that I have suggests to me if you use remote deposit capture,
8 you are more engaged. You know, there's ecosystem effects
9 here. Right? So you're more sticky. You're engaged with the
10 bank. And a lot of folks, I would imagine, would consider
11 that the primary banking relationship. And then what do they
12 do? They buy more products. They are more engaged with the
13 organization if remote deposit capture is active.

14 Q. And -- and is it true that USAA has no data whatsoever on
15 the percentage of members who decided to bank with USAA
16 because mobile deposit has a feature that automatically
17 captures the picture of the check?

18 A. I haven't seen any specific data to answer that exact
19 question outside of the data that I've already provided.

20 Q. And so you're testifying today as USAA's corporate
21 representative on the value of each of the USAA
22 patents-in-suit and any related patents. Correct?

23 A. Yes, ma'am.

24 Q. And you are also testifying today as USAA's corporate
25 representative on the value that USAA assigns to features

1 allegedly covered by the USAA patents-in-suit. Correct?

2 A. Yes, ma'am.

3 Q. But sitting here as USAA's corporate representative,
4 you're not aware of USAA itself having put a value on the
5 feature of a mobile deposit system that presents the photo of
6 the check to the customer before it's submitted for deposit.
7 Correct?

8 A. I'm not aware.

9 Q. Has USAA analyzed if customers will stop using mobile
10 deposit if they don't see a photo of the check before it's
11 submitted for deposit?

12 A. I'm not aware of that.

13 Q. Has USAA analyzed whether customers will leave USAA if
14 they don't see a photo of the check before it's submitted for
15 deposit?

16 A. Not -- not that I'm aware of. But I can tell you, being
17 able to deposit a check remotely is a must-feature -- a
18 must-have feature. In a -- in a digital world, you know, from
19 a banking perspective, it's a -- it's a must-have.

20 Q. And my question was, has USAA analyzed whether customers
21 will leave USAA if they don't see a photo of the check before
22 it's submitted for deposit?

23 A. I'm not aware of a study that was done if USAA members
24 would leave if we didn't have that feature.

25 Q. Now, USAA has a very large portfolio of patents related

1 to the remote deposit capture. Correct?

2 A. We do, yes, ma'am.

3 Q. How many issued patents are in that portfolio today?

4 A. Over a hundred.

5 Q. And how many pending patent applications are in that
6 portfolio?

7 A. My understanding, at last count, it's over 50.

8 Q. Do all of USAA's RDC patents have value?

9 A. In my opinion, they do.

10 Q. Are some of them more valuable than others?

11 A. Yes. I mean, certainly if a patent was related -- I
12 don't know. I'll use the car example. If you have a patent
13 and -- for a mirror versus a patent for the engine, you know,
14 you would make the argument that that patent that represents
15 the engine could be more valuable because you can still go
16 down the highway with it.

17 Q. And the ones that have features that are nice to have are
18 less valuable than the ones that are covering the core
19 technology. Correct?

20 A. It depends. It depends on the bank doing the licensing.

21 Q. Are you aware of -- is there any license that USAA has
22 given to just the six patents that are asserted against PNC in
23 this case?

24 A. No. We have two agreements so far.

25 Q. And both of those agreements cover USAA's entire RDC ?

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(Redacted.)

1 MR. LANTIER: Your Honor, that completes this
2 witness. There was one more witness by deposition, and the
3 parties would request that Your Honor keep the courtroom
4 sealed for the playing of this deposition.

5 THE COURT: All right. You agree with that,
6 Mr. Sheasby?

7 MR. SHEASBY: Yes, Your Honor.

8 THE COURT: All right. Let's proceed with the next
9 deposition. If you'll introduce the witness and give us the
10 times.

11 MR. LANTIER: Yes, Your Honor.

12 PNC calls Mr. Ron Epstein, who at the time of his
13 deposition was managing partner of Epicenter IP Group, LLC.

14 The run times are for PNC, 4 minutes and 52 seconds, and
15 for USAA, 4 minutes and 27 seconds.

16 THE COURT: Let's proceed, please.

17 RON EPSTEIN, SWORN, BY VIDEO DEPOSITION,

18 Q. Can you please introduce yourself for the record?

19 A. My name is Ron Epstein.

20 Q. And are you the founder and managing partner of Epstein
21 Law? I'm sorry, Epicenter Law?

22 A. Yes, I'm the managing partner of Epicenter Law.

23 Q. Kind -- what does Epicenter Law handle?

24 A. Primarily patent licensing disputes. Well, patent
25 licensing in general, and advising companies, both

1 patentholders and defendants, in negotiating patent licenses.

2 Q. So when you're retained to negotiate a license on behalf
3 of your client, is your job to get the best possible deal for
4 your client that you can?

5 A. The best possible result, yes.

6 Q. So USAA was a client of Epicenter Law. Is that correct?

7 A. That's correct.

8 Q. And what did you say the portfolio was worth?

9 A. More.

10 Q. How much more?

11 A. I don't recall the specifics.

12 Q. Is it --

13 A. But it's one of the most valuable patent portfolios I
14 have ever been involved with, and I've been involved with
15 multiple \$100 million-plus patent portfolios.

16 Q. So in or around September 6th of 2006, Epicenter Law was
17 retained by USAA to undertake this licensing effort on USAA's
18 behalf?

19 A. We certainly memorialized -- yeah, we memorialized the
20 relationship in a contractual form around September 6.

21 Q. Were you involved in preparing this document?

22 A. I don't believe I participated in this particular one.

23 Q. Exhibit 11. Do you have Exhibit 11 in front of you?

24 A. Yeah.

25 Q. So does this indicate that USAA made an offer to Dollar

1 Bank at \$450,000?

2 A. Yeah, it appears so.

3 Q. Okay. USAA authorized Epicenter to make an offer to
4 Dollar Bank at 455 -- \$450,000?

5 A. I believe that's correct, yeah.

6 Q. And that would have been an offer for the entire USAA
7 patent portfolio?

8 A. That's right.

9 Q. And that would have been a lump sum?

10 A. That's what I believe, yeah.

11 Q. So if Dollar Bank had said, Great, \$450,000 for a license
12 to the whole USAA RDC patent portfolio, sounds good to us,
13 USAA was prepared to take that deal?

14 A. I believe so.

15 Q. Did Epicenter make any licensing proposal to any
16 financial institution that used a license calculation based on
17 benefits to the financial institution other than cost savings?

18 A. Typically we highlighted that there were a great number
19 of benefits to the financial institution, but for simplicity
20 of ongoing negotiation, we'll focus on the most concrete one,
21 which is cost savings.

22 Q. And the only licensing proposals that USAA made to any
23 financial institutions were based on cost savings benefits.
24 Correct?

25 A. So we would make the point, there's a number of areas of

1 value you're getting here, but for purposes of constructing a
2 number we'd be willing to give you a license for, rather than
3 pursue some alternative way of dispute resolution, we will
4 focus just on cost savings, not on any other form of value.

5 Q. And, therefore, in preparing these proposals, the only
6 benefit that was quantified and included in the license
7 calculation was cost savings. Correct?

8 A. For purposes of these license numbers, that's right,
9 yeah. What you do on licensing is to create a much simpler
10 model, easier to understand, as an alternative to that
11 pathway--right?--and create an advantage to do the licensing
12 path rather than the litigation path.

13 Q. I want to look at the next page of Exhibit 10, the second
14 bullet that says, "Cost savings attributed to USAA patented
15 inventions."

16 Do you see that?

17 A. Yeah.

18 Q. And then it says, "Assume 50 percent of total cost
19 savings."

20 A. Yep.

21 Q. Do you see that?

22 A. Yep.

23 Q. Tell me what that's intended to convey.

24 A. So a license is a negotiation to sell a particular
25 risk--right?--and the risk is if we go to trial, you're going

1 to have to pay the full amount of damages as required under
2 damages law under the *Georgia-Pacific* factors.

3 In licensing, you'll pay a subset of that because you're
4 giving discounts for ambiguities that are not being resolved
5 the way they would be resolved in a trial.

6 One of the ambiguities that would not be resolved in a
7 face-to-face negotiation that would be resolved in a trial is
8 what percentage of the cost savings is properly attributable
9 to the patent owner.

10 We can argue using existing case law, 70, 80, 90 percent.
11 Other people want to argue, 5, 10, 20 percent. We throw 50
12 percent in there as a medium to sort of help scope the
13 situation as a reasonable compromise, or at least from a --
14 from a -- as a negotiation tactic. We throw that 50 percent
15 in because it's sort of the average of everybody -- it's in
16 the middle of everybody's stated numbers.

17 Q. Let's look at the attachments which we marked as Exhibit
18 14. Okay. And this is another document that's a license
19 calculation.

20 Do you see that?

21 A. The second page? Yes.

22 Q. The whole document, it's three pages long, and it looks
23 very similar to the one that we just looked at for Dollar
24 Bank. Correct?

25 A. That's right.

1 Q. And it uses a similar methodology to the one we looked at
2 for Dollar Bank. Correct?

3 A. That's correct.

4 Q. Focused on cost savings. Right?

5 A. Yes.

6 Q. And here, if you look at page 2, the proposed license to
7 SunCoast was \$2 million.

8 Do you see that?

9 A. I do.

10 Q. And that was a lump sum?

11 A. I believe so, yes.

12 Q. And that was for the entire USAA RDC portfolio?

13 A. That's correct.

14 Q. So if SunCoast had said, We'll take it, \$2 million for
15 lump sum for a license to the entire RDC portfolio, USAA was
16 prepared to do that deal. Right?

17 A. So if SunCoast said yes, we could have closed -- I
18 believe we would have closed the deal for \$2 million, yeah.

19 Q. Now I want to ask you about Exhibit 2, which is the
20 retention agreement between Epicenter and USAA.

21 A. I have it up.

22 Q. Okay. Thank you.

23 And if you can turn to the success fee tier schedule,
24 please, which is on page 4 of the PDF.

25 Okay. The basic idea under this fee structure is that

1 the more revenue that is generated under these license
2 agreements, the more you earn in success fee. Right?

3 A. Yes. There's -- I earn success fees and they've incented
4 me to help them get as much money as possible.

5 Q. When you're considering what would be a reasonable
6 licensing fee for a bank or financial institution, do you take
7 into consideration whether they are competitors or major
8 competitors of USAA?

9 A. Absolutely.

10 Q. How does that impact the negotiation?

11 A. USAA is less -- it would raise the price. We would have
12 different lower discounts off of liability at trial for those
13 kinds of deals.

14 Q. To your knowledge, are Dollar Bank or SunCoast Bank
15 considered significant competitors of USAA?

16 A. No one at USAA has ever told me that they view them as
17 significant competitors.

18 Q. What about PNC Bank? Do you have an understanding as to
19 whether PNC is a significant competitor of USAA?

20 A. I've been told that some members of USAA view PNC Bank as
21 a significant competitor, yes.

22 Q. I'll use the phrase 'general framework'. I think that's
23 what was used a couple of times today. Do you have in mind
24 this -- you talked about kind of having a general framework
25 for presenting proposals for licensing like the ones that we

1 looked at for Dollar Bank and SunCoast bank. Do you know what
2 I'm talking about?

3 A. Yes.

4 Q. Is that general framework applicable to banks of every
5 size, sort of going all the way up to the trillion-dollar-plus
6 or second-tier banks?

7 A. Yes.

8 THE COURT: Does that complete this witness by
9 deposition?

10 MR. STONE: It does, Your Honor.

11 THE COURT: All right. Ladies and gentlemen of the
12 jury, we are --

13 First of all, I'm going to unseal the courtroom and
14 direct the Court Security Officer to invite the public to
15 return.

16 (Courtroom unsealed.)

17 THE COURT: Having done that, I'm going to ask you
18 to have lunch. Please take your notebooks with you to the
19 jury room. I understand lunch is either there or on its way.
20 The next witness is going to be of some length, and I don't
21 want to start them at 20 minutes until 12:00, so that's why
22 we're going to break now.

23 Please follow all my instructions, including not to
24 discuss the case among yourselves. And we'll attempt to
25 reconvene as close to 12:30 as we can.

1 With that, ladies and gentlemen, the jury's excused for
2 lunch.

3 (Whereupon, the jury left the courtroom.)

4 THE COURT: All right. Be seated, please.

5 For your information, counsel, Plaintiff has remaining
6 2 hours and 28 minutes. Defendant has remaining 2 hours and
7 14 minutes.

8 And as requested by counsel, we'll take an early lunch so
9 that you can work through your adjustments to the slides and
10 materials for the next witness.

11 Anything else we need to be aware of or take up before we
12 break for lunch?

13 MR. SHEASBY: Your Honor, I just have one request to
14 minimize the amount of my standing up and objecting. Can I
15 ask that they send me copies of the slides that --

16 THE COURT: I want both sides to fully meet and
17 confer, show each other what you've got. If there's a
18 problem, I'll hear about it, but we're not going to hide
19 anything or fail to disclose anything.

20 MR. STONE: Absolutely.

21 THE COURT: All right. We stand in recess for
22 lunch.

23 (Lunch recess.)

24 THE COURT: Be seated, please.

25 Defendant, are you prepared to go forward with your next

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(Redacted.)

1 MR. SHEASBY: Yes, Your Honor. Actually can we take
2 this slide down? Can we at least not show it to the gallery?

3 MR. STONE: I apologize. Yes, we should take it
4 down.

5 THE COURT: Tell me what your problem with the slide
6 is.

7 MR. SHEASBY: So the number 2.75 is not in the
8 report, a calculation based on the 2.75 is not in the report,
9 the 6 percent is not in his report. I looked at these
10 paragraphs, and he should say what's in these paragraphs. He
11 should not say different numbers than what's in his
12 paragraphs.

13 THE COURT: So you don't agree with Mr. Stone that
14 this is merely an adjustment of what's in his prior report to
15 factor out the two dropped patents.

16 MR. SHEASBY: I do not because he never did the
17 calculations in the original report.

18 THE COURT: Is that true, Mr. Stone?

19 MR. STONE: He did not do the division of 400 by
20 2.75 in his original report. He simply said that is what you
21 do. So he doesn't do that arithmetic calculation, but there's
22 nothing about an arithmetical calculation that necessitates
23 doing all of the computations for the other side is my view,
24 Your Honor.

25 THE COURT: Did he say in his report that you would

1 divide by that?

2 MR. STONE: Yes, he did, Your Honor.

3 THE COURT: He just didn't carry out the
4 mathematical computation?

5 MR. STONE: Yes, he did, Your Honor. That's in
6 Paragraph 382 of his report, I believe.

7 MR. SHEASBY: And just -- I'll let you rule, Your
8 Honor. I apologize.

9 THE COURT: This is 382. Is that correct?

10 All right. I've read Paragraph 382. What else do I need
11 to hear that I haven't already heard from you-all?

12 MR. STONE: I think the only other thing is the
13 calculation with the numbers that are appropriate now that the
14 two patents were dropped is also laid out in greater detail or
15 the arithmetic is done in the supplemental report which we
16 provided to USAA's counsel on Saturday.

17 THE COURT: Well, and as I mentioned when we
18 discussed a similar matter in chambers, a supplemental report
19 filed without leave of Court Saturday before jury selection on
20 Monday is not appropriate and is not timely and is not
21 something that the other side can be said to have been placed
22 on fair notice of.

23 And PNC acknowledged to me in chambers that the
24 supplemental report from this witness was not authorized by
25 the docket control order, was not within that time period, and

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(Redacted.)

1 leave. I didn't appreciate that we needed to. I take full
2 responsibility for not having done that. But we did do the
3 calculations as quickly as they could be done once the two
4 patents were withdrawn?

5 THE COURT: Well, as I told you in chambers, I
6 understand the chaotic nature of trial preparation as you come
7 down to jury selection, although I wonder what in the world
8 would have happened if this case had really gone to trial in
9 April like it was supposed to have.

10 But, nonetheless, I can't allow a supplemental report
11 filed on the eve of trial without approval of the Court to be
12 binding on the other side or else there would be a deluge of
13 last-minute supplemental reports on everything, and I just
14 can't do that.

15 MR. STONE: And I -- Your Honor, I appreciate that,
16 and I really -- I truly apology to the Court, and I'm not
17 saying it should be binding on the Plaintiff. I am saying
18 it's a very short report of about one-and-a-half or two pages
19 in length, and the calculations in it are quite simple because
20 all we're doing is arithmetic.

21 THE COURT: Let's see if we can't bring this to a
22 close because we're using your time here.

23 What's your response to Mr. Stone's argument
24 incorporating the mathematics that are in the footnotes, Mr.
25 Sheasby?

1 MR. SHEASBY: So I think his point is reasonable.
2 What's not in there is the final numbers, and that was the
3 only thing we are objecting to.

4 THE COURT: Can I see the slide again, the proposed
5 slide?

6 All right. I think, in light of everything I've heard
7 and particularly the footnotes that are in the report relating
8 to paragraph 382, and given that there is no structural change
9 here, it does simply reflect the dropping of those patents.

10 I'm going to overrule the objection and permit this
11 demonstrative.

12 MR. SHEASBY: Thank you, Your Honor.

13 MR. STONE: Thank you, Your Honor.

14 THE COURT: All right. Are we ready to bring in the
15 jury and begin with the next witness?

16 MR. STONE: Yes, Your Honor.

17 THE COURT: Let's bring in the jury, please.

18 (Whereupon, the jury entered the courtroom.)

19 THE COURT: Welcome back, ladies and gentlemen.
20 Please have a seat. We'll continue with the Defendant's case
21 in chief.

22 Defendant, call your next witness.

23 MR. STONE: The Defendant PNC Bank calls Christopher
24 Vellturo.

25 THE COURT: All right. If you'll come forward, sir,

1 and be sworn.

2 (Whereupon, the oath was administered by the Clerk.)

3 THE COURT: Please have a seat on the witness stand.

4 If you'd like to pour some water, there are cups and a
5 carafe of water there. If not, that's fine.

6 THE WITNESS: Thank you, Your Honor.

7 THE COURT: Mr. Stone, you may proceed with direct
8 examination when you're ready.

9 MR. STONE: Thank you, Your Honor.

10 CHRISTOPHER VELLTURO, PhD, SWORN,

11 testified on direct examination by Mr. Stone as follows:

12 Q. Doctor Vellturo, would you introduce yourself, please, to
13 the ladies and gentlemen of the jury?

14 A. Sure. I'm Chris Vellturo.

15 Q. And what is your role in this case, Doctor Vellturo?

16 A. So I'm here to assist the jury, applying my training and
17 my experience, on issues, should the jury decide that they
18 need to address them, related to damages.

19 Q. And have you prepared some slides to help us all
20 understand your testimony?

21 A. Yes.

22 MR. STONE: Could we bring those up?

23 Q. (BY MR. STONE) And the first slide that we have up, what
24 does this show us about your qualifications for the testimony
25 you're prepared to give today?

1 A. Well, this is pretty much the qualifications I brought
2 with me here. I have a college degree in mathematics and
3 economics from Brown University in Rhode Island, and then I
4 have a Ph.D. in economics from Massachusetts Institute of
5 Technology--that's MIT--in Massachusetts.

6 I taught while I was there. I've taught at the business
7 school of Boston University since then. Published a bunch of
8 papers, done a lot of testimony.

9 Q. And in this case you're testifying for the Defendant PNC
10 Bank, but have you testified in other cases for the
11 plaintiffs?

12 A. I have. It's about 50/50 defendants and plaintiffs.

13 Q. What did you do after getting your Ph.D.

14 A. So I -- I went to work. I had two small children by that
15 point in time. I went to work and started doing both
16 consulting and teaching, and that was 35 years ago, still
17 doing it.

18 Q. Do you have expertise in valuing patents and evaluating
19 damages in patent cases?

20 A. Yes, I do.

21 Q. Could you briefly tell us what your experience has been
22 there?

23 A. Well, I've looked at the value of patents in situations
24 like this, and then I've also been brought in as a consultant
25 to work with companies that are designing or implementing

1 licensing programs.

2 In that context, I've been kind of the central involved
3 person in developing the program about between 12 and 20
4 times. But, more broadly, I've been brought in to work on
5 licensing issues several dozen times.

6 Q. Are you being compensated for your work on this case?

7 A. Yes.

8 Q. And does your compensation depend in any way on the
9 outcome of this case?

10 A. No.

11 Q. Does it depend in any way on the substance of your
12 testimony?

13 A. It does not.

14 MR. STONE: Your Honor, at this time we would offer
15 Doctor Vellturo as an expert in economics, the valuation of
16 patents, patent damages, and the determination of a reasonable
17 royalty.

18 THE COURT: Is there objection?

19 MR. SHEASBY: No objection, Your Honor.

20 THE COURT: Without objection, the Court will
21 recognize this witness as an expert in those designated
22 fields. Please continue.

23 Q. (BY MR. STONE) If we could go to the next slide if
24 that's okay with you, Doctor Vellturo.

25 Can you tell us what your assignment was in this case?

1 A. Well, as you've heard several times over the past week,
2 to the extent damages are awarded here, they are awarded as a
3 reasonable royalty. I'll speak a little more about what that
4 means shortly. So I've been asked to determine a reasonable
5 royalty.

6 I was also asked to look at USAA's damages claims as we
7 heard earlier this week and apply my expertise to that.

8 Q. And under what circumstances does your testimony here
9 become something the jury needs to address?

10 A. Right. So I think, as you've heard several times again
11 during this trial, damages are only owed if there's a finding
12 of infringement and that the patents are not invalid. So my
13 work only applies under those findings.

14 Q. By testifying here today, are you in any way suggesting
15 anything about either whether the patents are valid or whether
16 they're infringed?

17 A. No. If I don't assume those things, I have nothing to
18 do.

19 Q. Okay. Before we go into the details of your analysis,
20 would you summarize your conclusions for the jury, which I
21 think are up on the next slide?

22 A. Right. So I've done several different analyses, which
23 I'm going to go through today, and they all point in the same
24 direction.

25 We have direct evidence of what happens when the patented

1 features are removed, and that's really central to my
2 analysis. And that indicates the value of the inventions,
3 which is a central controller of a license to the inventions,
4 is \$8 million in total.

5 In addition to that, I looked at the licenses associated
6 with this case, and I found those licenses provided both a
7 per-unit number in the range of about 3 cents per mobile
8 deposit; or if you think about them in dollars, it's again a
9 very similar number--as I said, about \$8.8 million.

10 I considered those in the context of what I knew about
11 what it costs for a fully built-out MRDC system. That should
12 sound familiar. That's the NCR agreement which I'll speak
13 to momentarily. And that's 12 cents per mobile deposit. And
14 my royalty numbers in that context make perfect sense. So
15 that all kind of squares together.

16 And so what I find is a reasonable royalty here is \$10.5
17 million. If we discount that to the dollars that would be
18 owed at the time of the negotiation, that would be \$8 million.
19 And I'll explain how I do that in a moment as well.

20 Q. Were you here during the testimony of Mr. Kennedy, who is
21 USAA's damages witness?

22 A. Yes. I've been here for the whole trial.

23 Q. And do you have a -- did you find some areas in which you
24 and he had agreement?

25 A. Most definitely.

1 Q. Do you have a slide that shows the areas of your
2 agreement?

3 A. I do.

4 Q. Could you explain to us what your areas of agreement are?

5 A. Well, they relate to how you go about doing this. The
6 first one is this idea of a hypothetical negotiation where, to
7 figure out what a reasonable royalty is, you set the two
8 parties down and say, you need to work out a license to this
9 technology as PNC is alleged to have used it. That's right.
10 That's the way you need to think about it.

11 The *Georgia-Pacific* factors need to be applied. That's
12 right. That's the way to think about it.

13 The damages should be apportioned to be specific to the
14 value of these two features. That's right, and that's what --
15 that's what I do.

16 MR. SHEASBY: Your Honor, I object to that
17 testimony. You don't apportion to the features. You
18 apportion to the patents. That's an improper statement of the
19 law.

20 THE COURT: Well, you may not agree with his
21 testimony and you can certainly address it on
22 cross-examination, but that's not a valid evidentiary
23 objection.

24 MR. SHEASBY: Thank you, Your Honor.

25 Q. (BY MR. STONE) Please continue, Doctor Vellturo.

1 A. Right. And then the last one, which probably doesn't
2 come as a surprise, is that PNC's implementation of version
3 4.20.1, which has the features removed, tells you a lot about
4 the value of the asserted patents because the patents relate
5 to those features.

6 Q. And do you and Mr. Kennedy agree that version 4.20.1 does
7 tell you a lot about the value of the asserted patents, the
8 four patents at issue in this case?

9 A. Yeah. That's what that bullet point says.

10 Q. Okay. And what is the basis for your conclusion that you
11 and he agree on that?

12 A. He said it at trial yesterday.

13 Q. In this case, does USAA seek damages for the time period
14 after version 4.20.1 was implemented?

15 A. No.

16 Q. Do you have a slide that shows what changes were made in
17 version 4.20.1 --

18 A. Yes, I do.

19 Q. Okay. Let's take a look at that. Can you just remind
20 the jury what the features are that were taken out between the
21 prior version and the 4.20.1 version.

22 A. Right. So in the middle of 2021, PNC replaced its
23 existing mobile app with mobile app we've all heard is version
24 4.20.1. What was removed between those two versions was
25 customers could no longer perform auto-capture and customers

1 were no longer shown a picture of the check. Those are the
2 two features we talked about extensively here.

3 Q. And why are these changes relative to your determination
4 of a reasonable royalty?

5 A. Right. Because remember the parties are sitting down at
6 the table and trying to decide what's a reasonable royalty,
7 and what a reasonable royalty means is it's a royalty that
8 both sides can live with.

9 And on the PNC side, PNC is basically sitting there
10 saying, well, I have a choice at this negotiation. I can
11 either get a license and continue to use the patented features
12 in my system, or if I don't get the license because I think
13 the price is too high, for example, I can move over to 4.20.1.

14 And so the difference in the value between those two is
15 really the centerpiece of the negotiation in terms of what the
16 value of the invention is and what PNC would pay.

17 Q. Can we go to your next slide, please?

18 What are you showing us here?

19 A. So these are the three components of the value that a
20 license to the patents-in-suit would bring to PNC.

21 Q. Are these costs that PNC would not have incurred if it
22 had instead obtained a license?

23 A. Right. So sitting at the table, PNC is saying, I can get
24 a license and continue doing what I'm doing with the accused
25 system, but if I don't like the price of that license, I'm

1 going to need to move to 4.20.1 and I'm going to incur certain
2 costs that would be higher because I don't have the license.

3 Q. So what's the first one, the development and
4 implementation costs?

5 A. Well, that's the cost of getting the revised software
6 completed and out the door. And, I mean, this is a very
7 interesting case for an economist, which is usually I have to
8 estimate those numbers because it didn't actually happen. But
9 here it actually happened, so I have those dollars, and I
10 added them up and it's \$354,000. Ms. Larrimer testified
11 essentially to that number yesterday.

12 Q. And what's your second item, additional transaction
13 costs?

14 A. Well, additional transaction costs is, well, if I move to
15 version 4.20.1, are some customers that used to use mobile
16 deposit going to move to more expensive ways of depositing for
17 PNC, like an ATM and like a teller? And so I account for
18 those costs, too.

19 Q. And how did you do that?

20 A. I did what's called a before-and-after study, and I did a
21 really big one.

22 Q. How big?

23 A. I took data points on actual transactions at PNC from
24 before the change to 4.20.1 and after the change. I looked at
25 all of those transactions, and that was 200 million

1 transactions that I studied.

2 Q. And what did you find?

3 A. So here's what I did. I'm like, well, you heard from Ms.
4 Larrimer yesterday, and I had seen it in the data, is that if
5 you just eyeball the data, you really don't see any change in
6 terms of how often people are using mobile deposit before the
7 change and after the change.

8 And so what I've learned throughout my years as an
9 economist who deals with a lot of data is sometimes your
10 eyeball can deceive you. So you want to dig into the details
11 about what exactly is going on and make sure your casual
12 observation really fits the facts.

13 So what I did is, I said, all right, I have all this
14 data, I have it from before, I have it from after, but other
15 things changed between those two periods and I need to take
16 account of that. For example, we were in the middle of COVID
17 during this period, and that affects how people decide whether
18 to deposit mobilely or deposit in another direction.

19 Things that are pretty basic affect whether you decide to
20 do it mobilely or do it in an ATM or branch. What day of the
21 week is it? Is your bank open? What month of the year is it?
22 There are a lot more checks that come in in June and December,
23 graduation and holidays, for example, and you need to account
24 for all those things.

25 And so I built a giant statistical model with 200 million

1 data points to control for all that stuff to make sure I
2 understood exactly what the effect of the change was.

3 Q. And do you have a chart that summarizes what you found?

4 A. I do.

5 Q. Can we go to that? What does this chart show us, Doctor
6 Vellturo?

7 A. So this is the structure of many charts I'm going to show
8 you today. It's showing you what happened when the accused
9 system was being used by customers and after when 4.20.1 came
10 in and the features were removed.

11 So what you can see is that in the period before, in
12 about 30.65 percent of the instances where customers went to
13 make a transaction with a check at PNC, about 30.65 percent of
14 the time they used mobile deposit. Did that number change
15 when 4.20.1 was implemented? And the answer is, it actually
16 did. It did go down, but it went down by a really small
17 amount, about a half a percentage point.

18 And just to give you some context for that, here's the
19 way to think about it. In the period with the old accused
20 system, out of 200 people that would have during that time
21 period used mobile deposit for their checks, in the world
22 where 4.20.1 was brought in afterwards, of those 200 people,
23 199 of them would still use mobile deposit and one would go to
24 an ATM or a teller.

25 Q. And did you compute the financial costs to PNC of what

1 you saw as a result of running your regression model?

2 A. I did. So what I did is I look at how much of that
3 volume -- if that volume moved to those more expensive
4 channels, what would that mean as higher costs to PNC.

5 Q. And we heard some testimony from Mr. Kennedy about what
6 the two different numbers that he talked about were, the
7 benefit of \$3.88 or \$3.87 and roughly a dollar, I think was
8 the other number he used.

9 Which of those did you use for purposes of calculating
10 the additional costs?

11 A. I used the higher number, the \$3.88.

12 Q. Okay. And then if we can go to the next slide. How did
13 you -- then the next one after this.

14 A. Right. So, by the way, just to be clear, that 4.7
15 million there, that's the total when I do all that math out.

16 Q. Oh. Sorry. That's what I was going to ask you.

17 A. Oh, okay.

18 Q. So the additional transaction costs that you computed
19 using Mr. Kennedy's number on a per-transaction benefit and
20 using your regression analysis adds up to what?

21 A. 4.7 million.

22 Q. The third item on your chart is added labor costs. What
23 does that reflect?

24 A. Well, Ms. Larrimer spoke to this a bit yesterday, and I
25 looked at the mathematics here as well. The switch to 4.20.1

1 led to more adjustments and disputes on mobile deposits and is
2 what Ms. Larrimer said is she needed to bring in eight
3 additional customer service people to manage those issues.
4 That costs money. That costs about between \$400,000 and
5 \$500,000 a year.

6 You notice my number is 10 times that number because if
7 you make this move and don't take a license, you've got to do
8 it year after year. So that's where the 5.4 million comes
9 from.

10 Q. And did you look at the number of increases in these Reg
11 E disputes that I think Ms. Larrimer was asked about
12 yesterday?

13 A. I did. I wanted to see if they were significant.

14 Q. And do you have a chart that summarizes what you found?

15 A. I do.

16 Q. Could we go to that chart? Thank you.

17 So what do we see on this chart, which is DDX 9.14.

18 A. Well, under 4.20.1, there were about 31,000 Reg E
19 disputes for the period I had. And I have annualized all of
20 this, but it's apples to apples. So there were 31,000
21 disputes, and it's important to put that in context. That's
22 among 4 million annual mobile account users. So people at
23 some point during the year that make a mobile deposit.

24 Q. How often -- how often would an individual expect that
25 they might encounter one of these disputes?

1 A. All right. So that means in any given year, a little
2 under one percent, or less than one in a hundred of the
3 accounts, would experience an event. Now, you can actually do
4 the mathematics out here, and it can tell you if the -- if one
5 out of every one hundred accounts in any given year sees an
6 event, how long would it take for the average account to see
7 an event. And it's actually once every 125 years. This is
8 rare stuff.

9 Q. Do you have a slide that summarizes your conclusions
10 about the costs to PNC of moving to 4.20.1?

11 A. I do.

12 MR. STONE: Could we bring that up, please?

13 Q. (BY MR. STONE) So can you explain to the jury what
14 you've done to come to these total costs to PNC?

15 A. Well, I added the first three numbers together, \$354,000,
16 \$4.7 million, and 5.4 million, and that gives the cost to PNC
17 of \$10.5 million.

18 Q. And then you have a line that says, discounted to net
19 present value. If you would, please explain what that means.

20 A. Okay. So what PNC would be paying for a license, it
21 would pay all up front at the time of the negotiation, in this
22 case 2006. But the dollars associated with the savings that
23 it would get through the license, those dollars occur out into
24 the future and actually some of it way out in the future.

25 And so the question is, how do you compare those numbers

1 to make sure you're doing it right. And so here's the basic
2 concept. If I were to give you a dollar today or I were to
3 promise you a dollar tomorrow, dollar five years from now,
4 which one is more valuable to you when I'm making the offer to
5 you?

6 Obviously, the dollar is worth a dollar. I'm handing you
7 a dollar. And what I can do with that dollar if I give it to
8 you today is you can put it in a savings account and you can
9 earn interest on it. And so in five years' time, you don't
10 have a dollar anymore. You've got a dollar 20 or a dollar 30.

11 If I'm going to give you a dollar five years from now,
12 you can't do that because I'm not giving it to you for five
13 years. So that's part one. And then part two is I may not be
14 around to give you the dollar in five years. And so in that
15 sense dollars that come later are worth more than dollars that
16 come sooner, and this discounting just takes cares of that.

17 Q. And did Mr. Kennedy agree with you that you should do a
18 discount to net present value?

19 A. Yeah, this is very common and we both did it.

20 Q. Did you also look at the impact of this 4.20.1 version on
21 PNC's business?

22 A. I did.

23 MR. STONE: Can we bring up the next chart?

24 Q. (BY MR. STONE) What is this -- what do we see on 9.21?

25 A. So this is a listing of total accounts at PNC on a

1 month -- actually on a quarter-by-quarter basis from 2014 to
2 2021, both total accounts and checking accounts.

3 Q. And what was the source of the data on this chart?

4 A. These data came from what's called DX 0679. You can see
5 that in the bottom left-hand corner. So if you if you want to
6 see the data, that's where it is.

7 Q. And did you look here at what happened when various
8 changes were made with respect to the app?

9 A. I did. I mean, you can see they're pretty consistent.
10 They're rising slowly and pretty much at the same rate the
11 whole time.

12 MR. STONE: Can we bring up the next slide, please?

13 Q. (BY MR. STONE) What does this show us here?

14 A. Well, this is when PNC removed the accused features. And
15 if it had a dramatic effect on their business, they'd have a
16 lot more trouble keeping accounts and customers and a lot more
17 trouble tracking customers. But it didn't do that. The
18 numbers continue right on trend.

19 Q. And did you look at things other than just the number of
20 checking accounts and the total number of accounts?

21 A. Yes.

22 Q. What else did you look at?

23 A. I looked at the number of accounts using mobile deposit.

24 MR. STONE: Can we go to your next slide, please?

25 Q. (BY MR. STONE) What does this show us here?

1 A. Right. So this slide, the orange line at the top is
2 actually the same line we just looked at. That's the total
3 number of accounts. The blue line at the bottom is telling
4 you the number of accounts in a given month that used mobile
5 deposit.

6 Q. And so what percentage of the total accounts at PNC over
7 this period of time used mobile deposit?

8 A. It changes a little bit but not a whole lot. And so if
9 you take a number from the blue line in a given month and
10 divide it by the number on the orange line, you get about
11 eight percent, about one out of every 12.

12 Q. We have here another line drawn that I guess is red.
13 What does that reflect?

14 A. So remember that there was a time where PNC had mobile
15 deposit app that didn't have auto-capture. And then in 2016,
16 they introduced auto-capture. Actually technically MiTek
17 introduced auto-capture. And what you can see here is I drew
18 a line where that happened. And I wanted to see, did
19 auto-capture make a big difference in terms of how many people
20 were using mobile deposit.

21 So I looked at the blue line and said, is there a real
22 change in the blue line when mobile deposit comes up, and I
23 don't see one.

24 Q. And do you mean mobile deposit or auto-capture.

25 A. Well, I don't see a change in the mobile deposit volume

1 when auto-capture is brought in.

2 Q. Thank you. I might have misheard you.

3 And then did you also look at when 4.20.1 was introduced?

4 A. Right. So we can do another before-and-after study,
5 which is what happened before the patented features were
6 dropped and what happened after the patented features were
7 dropped. And that's the second red line. And you can see
8 same conclusion, things are running along at exactly the same
9 pace.

10 Q. Did you do any other before-and-after studies of metrics
11 that you might use to look at the impact on PNC's business?

12 A. Yes.

13 Q. What else did you look at?

14 A. I looked at app store ratings.

15 MR. STONE: Can we go to the next slide?

16 Q. (BY MR. STONE) What do we see on this slide, Doctor
17 Vellturo?

18 A. Right. So here the left-hand panel is ratings for IOS,
19 and this is a before-and-after study. With the features,
20 which is before the change, the App Store rating was 4.78
21 stars. After the features were removed, it actually went up a
22 little bit to 4.85 stars. And if you look over on the Android
23 side, again, the ratings didn't decline there, either.

24 Q. What's the value to you in calculating a reasonable
25 royalty of looking at these before-and-after studies?

1 A. Well, it really gets to the heart of the issue, right,
2 which is we are trying to understand the value of these
3 patented inventions. And the accused system in the before
4 period has the patented -- the alleged patented features in
5 it, and the system after doesn't.

6 And so when I compare those two to each other, it gives
7 me a very direct measure of exactly what the issue is here,
8 which is, what kind of value do these patented features bring
9 to a mobile deposit system. So that's why it was so
10 important.

11 Q. Can we go to your next slide?

12 Does this summarize your findings on the real-world
13 effect of removing the patented features?

14 A. Right. So the first one is that about one in 200 mobile
15 deposits that was done before under the accused system, maybe
16 one in about 200 after the features were removed left mobile
17 deposit and went to another mechanism. That's the first
18 point.

19 Q. What's the second one?

20 A. The second point is, as we saw, there was no impact on
21 customer accounts or accounts using mobile deposit. And then,
22 last, in terms of consumer ratings, there was no change in the
23 ratings.

24 Q. Now, you were here for Doctor Conte's testimony where he
25 said that 4.20.1 still infringes the auto-capture patent

1 because there is code in the computer or in software somewhere
2 that is still in PNC's system that relates to auto-capture.

3 Do you recall that testimony?

4 A. Yes.

5 Q. If he's right about that, does that change your analysis
6 in any way?

7 A. It does not.

8 Q. Why not?

9 A. Because, remember, I'm trying to capture the value in
10 this case of auto-capture as it's being used by customers.
11 The fact that it resides in any computer code anywhere doesn't
12 matter if the customers can't use it because that's where the
13 value comes from the feature, from the customers using it.

14 And here, whether it continues to infringe or not, I can
15 directly observe what customers thought and did when they no
16 longer had access to auto-capture. They couldn't use it.

17 Q. Yesterday Mr. Sheasby asked Doctor Bovik about three
18 other patents, not the four patents in this case but three
19 other patents. What impact, if any, does it have on your
20 analysis if the three other patents are potentially infringed
21 by 4.20.1?

22 MR. SHEASBY: Your Honor, I don't believe that's in
23 his report. I think in his report he just acknowledged their
24 existence and chose not to consider them.

25 THE COURT: Mr. Stone?

1 MR. STONE: Obviously it's an issue that arose after
2 he did his report, but I'll just ask him the reasons why he
3 didn't consider them, Your Honor.

4 MR. SHEASBY: If it was an issue that come up after
5 his report, I object to that, and he should stay within the
6 four corners of his report.

7 THE COURT: Well, given that exchange, I'll sustain
8 the objection. It doesn't mean you can't within the four
9 corners of the report address it at a higher level.

10 MR. STONE: Thank you, Your Honor. I appreciate
11 that.

12 Q. (BY MR. STONE) Doctor Vellturo, why was it that you
13 didn't consider any other patents outside the four in this
14 case as to whether or not they were infringed for purposes of
15 your analysis of a reasonable royalty?

16 MR. SHEASBY: Your Honor, can I approach?

17 THE COURT: Approach the bench.

18 (The following was had outside the hearing of the
19 jury.)

20 MR. SHEASBY: In his report, he said he did not
21 consider them because they are part of another litigation.
22 And so I'm totally fine if Mr. Stone wants to open that door,
23 but I just want to be clear I'm absolutely going to open that
24 door if he goes here.

25 THE COURT: Well, if he testifies contrary to

1 something that's in his report, I will expect you to impeach
2 him with his report during cross-examination.

3 MR. SHEASBY: Okay. I just want to be clear I'm
4 allowed to bring up -- isn't there a portion in his report
5 that actually says -- explains something different from
6 litigation as the reason?

7 MR. STONE: They're not relevant to this case.

8 MR. SHEASBY: So then I object to the question.
9 It's not in his report other than litigation, and so he
10 shouldn't be able to give any explanation other than he didn't
11 do it because counsel asked him not to.

12 MR. STONE: Your Honor, he didn't do it because he
13 thinks it has no impact on the calculations here.

14 MR. SHEASBY: That's not -- that's not --

15 MR. STONE: But I'm not going to open the door to
16 the other litigation.

17 THE COURT: All right. Then let's go forward.

18 MR. STONE: Thanks.

19 (The following was had in the presence and hearing
20 of the jury.)

21 THE COURT: Let's proceed.

22 Q. (BY MR. STONE) Is the -- in calculating the reasonable
23 royalty in this case, did you focus on the four patents that
24 are in this case?

25 A. And their value as manifested in the two features, yes.

1 Q. Okay. And so the -- it's the value of the two features
2 that are covered by the four patents in this case that is the
3 basis for your reasonable royalty?

4 MR. SHEASBY: Your Honor, I object. The patents
5 don't cover two features. That's a misstatement of the law.

6 MR. STONE: Your Honor, we --

7 THE COURT: As I've said earlier, if he wants to
8 characterize it that way, you can address it on
9 cross-examination.

10 MR. SHEASBY: Thank you, Your Honor.

11 Q. (BY MR. STONE) Did you do anything in addition to
12 calculating the value of the four patents in this case based
13 upon the difference in results, the before and after, of
14 4.20.1?

15 A. Yes.

16 Q. What was the other analysis you did?

17 A. I looked at the licenses that were available to me that
18 were relevant in figuring this same question out.

19 Q. And do you -- is that independent from your valuation of
20 4.20.1?

21 A. It's completely separate. It was -- this was based on
22 licenses I had and not on all those before-and-after studies
23 we just did.

24 Q. And do you have a slide that summarizes the different
25 licenses that you looked at?

1 A. I do.

2 MR. STONE: If we could bring that up.

3 Q. (BY MR. STONE) What are the four licenses that you
4 looked at?

5 A. They are the NCR agreement, the Bremer license agreement,
6 Wells Fargo, the Wells Fargo license agreement, and then
7 offers USAA made to Dollar Bank and SunCoast Bank.

8 Q. And what is the NCR agreement, if you could remind us of
9 that briefly?

10 A. Right. So I think I have a slide on this.

11 The NCR agreement is the agreement under which PNC gets
12 all of its mobile deposits software and services from NCR.
13 That includes a fully-developed system for doing mobile
14 deposit, includes the software that sits up on the computers
15 at PNC, it includes the software that sits on your phone when
16 you download the app, it's the maintenance and support of all
17 of that, and it's all the intellectual property that NCR has
18 or that its suppliers have. You get rights to all that.

19 Q. What's that cost to PNC?

20 A. It's 12 cents per mobile deposit.

21 MR. STONE: Your Honor, we'd request that we seal
22 the courtroom for the next line of questioning if we could?

23 THE COURT: Based on counsel's request and to
24 protect confidential information, I'll order the courtroom
25 sealed.

1 I'll direct that all persons present who are not subject
2 to the protective order that's been entered in this case
3 should excuse themselves and remain outside the courtroom
4 until it's reopened and unsealed.

5 (Courtroom sealed.)

6 THE COURT: All right. The courtroom is sealed.

7 Mr. Stone, you may proceed.

8 Q. (BY MR. STONE) Doctor Vellturo, can we go to your next
9 slide, please? What does this slide show us?

10 A. This shows details of the license that USAA granted to
11 Bremer.

12 Q. And what are the important constituents of that license
13 agreement?

14 A. First, let me talk very briefly about Bremer Bank.
15 Bremer Bank is a bank in the Midwest, and it's a full service
16 bank. It offers all the checking and savings services you
17 would expect. It offers home loan mortgages, home equity
18 mortgages. It also offers financial services. If you want an
19 investment advisor or if you want to invest your -- your
20 savings through them. So it's a full-service bank.

21 Q. And what were the key elements of that license agreement
22 between Bremer and USAA?

23 A. So the key bottom line number is that Bremer obtained a
24 license to USAA's mobile deposit patent portfolio, which I'll
25 speak to in a moment, and in return they paid 58 cents per

1 mobile transaction, I'm sorry, per mobile deposit.

2 Q. And what rights to how many patents did they get under
3 that license agreement?

4 A. They got rights to 107 patents, including the four
5 patents at issue here today.

6 Q. And how do you apportion the 58 cents per deposit amongst
7 those 107 patents?

8 A. Right. Well, you can't attribute the 58 cents in its
9 entirety to the four patents. There are another 103 patents.
10 So how do you solve that problem? And it's a problem
11 economists have dealt with for a long time. And there's a
12 method we use, and it's called a patent citation analysis.
13 And let me explain how it works.

14 Patents are not all created equal. That's why they're
15 patents. Some patents have relatively little value and some
16 have a lot of value. Mr. Kennedy spoke to this yesterday when
17 he kind of said there's this curve where some patents are, you
18 know, have a little bit of value and others have a lot. So
19 we're going to take advantage of that in this patent citation
20 analysis.

21 The key idea behind this analysis is, how do you know
22 whether a patent is really valuable or not. Well, if a
23 patent's really valuable, then other people look at that
24 patent and say, hey, that's a pretty valuable patent. Let me
25 start doing some more work in that area and develop my own

1 patents that kind of feed off the idea of that first patent.

2 When that happens, those patents that come later when
3 they file for their patents with the Patent Office, they have
4 to refer back to the patents that kind of inspired them or got
5 them where they are today. And if you're an important patent,
6 a lot of people refer to your patent because it inspired them
7 to do their work. And if your patent's not very important,
8 not a lot of people do it.

9 Now, you got to be careful. Right? Because for at least
10 two reasons. One is a patent might just be older. Right?
11 And so people have more time to refer to that patent. So you
12 want to make sure you account for the age of the patent. And
13 I do.

14 And the second one is patents are in all kinds of
15 different industries or, here, I call it field of use. And
16 some industries just have a lot more innovation than others.
17 So you need to control for that, too. And I do. And when you
18 make that controlling, when you do all of that controlling and
19 look at the curve that tells you, you know, where patents
20 typically fall in terms of their relative value, you can
21 actually figure out what the value of each of the patents in a
22 portfolio like this is relative to one another. And I did.

23 Q. And did you figure out the relative value of the 107
24 patents that were licensed to Bremer?

25 A. Well, most importantly, I figured out the relative value

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(Redacted.)

1 are most significantly competitive with us at USAA. And what
2 they're looking at here is they are saying, let's look at our
3 account holders and let's ask them, which is what this is,
4 it's a survey, let's ask them, if you have another bank
5 account, who is it with? Because obviously if they've got
6 accounts at both places, that means you are closer
7 competitors. And the top bank by substantial amount was Wells
8 Fargo at 19 percent. PNC is on the list, but it's vastly
9 lower at 3 percent?

10 Q. Okay. Let me --

11 A. I'm sorry. You know, I just -- I jump ahead, but that
12 tells you that when you think about the relative competition
13 to USAA, Wells Fargo is a much stronger competitor in USAA's
14 view than PNC is.

15 Q. Did you also look at two offers that USAA made to other
16 banks?

17 A. Yes.

18 Q. And could we go to your next slide and can you summarize
19 for us what you have here as the offer to Dollar Bank?

20 A. Right. So USAA made an offer to Dollar Bank for a
21 license to all of its remote deposit patents, and that offer
22 was made at \$450,000.

23 Q. And what about SunCoast? What was the offer to SunCoast?

24 A. The offer to SunCoast was the same for the whole remote
25 deposit portfolio, and it was for \$2 million.

1 MR. STONE: If we can then go to the next slide.

2 Sorry.

3 Q. (BY MR. STONE) We see here something referred to as the
4 *Georgia-Pacific* factors. We heard about this from Mr.
5 Kennedy. What are they?

6 A. So these are 15 factors that the courts over the years
7 have identified as meaningful items to look at and consider
8 when doing a reasonable royalty analysis like this. And I --
9 and I considered them all.

10 Q. And you have them grouped here into four different
11 groups. Why did you do that?

12 A. It takes less time, first of all. Going through all 15
13 would not be fun. But they have very common characteristics
14 to each other. Mr. Kennedy talked about this, and he was
15 right.

16 Factors 1, 2, 4, 12, and 14 relate to licensing history.
17 Factors 3, 5, 7, and 14 relate to the nature of the parties
18 and how they relate to each other. 6, 8, 9, 10, 11, 13, and
19 14 relate to the patented invention itself, who uses it, what
20 benefits they get, what alternatives they are. And then the
21 last one is, at the end of the day what's a reasonable number.
22 And so I did them all.

23 We basically have done them all already. Right? We did
24 the licensing work, we just finished that. In terms of the
25 value of the invention, we did that during my before-and-after

1 cost study. The relationship to the parties, we just did
2 that, too. So most of this I've already taken care of.

3 Q. Did you also, in addition to this analysis, look at what
4 Mr. Kennedy presented and sort of analyzed that to see if you
5 agreed or disagreed with it?

6 A. I did. That's USAA's claim. That's my second
7 assignment.

8 Q. And what did you conclude about his estimate of a
9 reasonable royalty?

10 A. It's -- it really doesn't hold together, given the nature
11 of the two inventions. Centrally here, these are two features
12 of mobile deposit which is a feature of the mobile app, which
13 is a feature of electronic banking, which is a feature of the
14 overall banking relationship that customers have with PNC.

15 And so when you think about it that way and look at the
16 before-and-after study, the idea of \$300 million just doesn't
17 stand up.

18 Q. Could we go to your next slide?

19 A. Right.

20 Q. What do we see shown here?

21 A. So the first bar I have here looks at actual average
22 monthly deposits of -- for the period June to October 2020.

23 Q. And why do you use that period?

24 A. Well, that's the accused period in -- where the accused
25 system is still being used.

1 Q. And then do you have data for what happened in that same
2 set of months afterwards?

3 A. Yeah. We'll get to that in a moment.

4 Q. Okay. So what did -- what did Mr. Kennedy's models
5 predict would happen?

6 A. So Mr. Kennedy's models predicted that without the
7 patented inventions, the MRDC systems or the remote deposit
8 capabilities that PNC could offer would be pretty poor, and
9 that the number of deposits would drop, mobile deposits would
10 drop a lot.

11 And, again, we have the data from the actual world to
12 tell us whether that happened or not, and the bars show you
13 how his -- his approach, how far we should expect those
14 numbers to fall.

15 Q. And what actually happened during the months of June
16 through October 2021?

17 A. They didn't fall. As Ms. Larrimer told you yesterday,
18 they stayed high and they've continued to stay high.

19 Q. What does that lead you to conclude about Mr. Kennedy's
20 models?

21 A. It just -- it doesn't capture the value of these
22 features. When these features were removed, there wasn't this
23 wholesale collapse in the use of mobile deposit at PNC. It
24 basically stayed the same. A little change. I mean, I didn't
25 want to do all that work to say there is no change. There is

1 a little change.

2 Q. Doctor Vellturo, we also heard from Mr. Kennedy that
3 there might be a number of branches that were closed because
4 of people stopping depositing in branches and starting to
5 deposit mobilely. So he said if we take away the ability to
6 deposit mobilely, that would bring these checks back to the
7 branches. Do you recall that testimony?

8 A. Yes.

9 Q. Did you look at what the effect would be if you assumed
10 that all of PNC's mobile deposits stopped being mobile
11 deposits and went back instead to being deposits at a branch?

12 A. Yes.

13 Q. Do we have a slide that summarizes that analysis?

14 A. I do. And some of this you went through with Mr. Kennedy
15 yesterday, so I'm going to try to summarize it so we don't
16 have to go over old ground.

17 But the average monthly checks that are handled by remote
18 deposit at PNC, it's about 2.6 million checks a year at its
19 absolute most highest month ever. In their lowest month ever,
20 PNC had about 2100 bank branches. When you think about how
21 often a bank branch is open, which is like 22 to 26 days a
22 month, you can actually figure out how many more checks does
23 this mean a given branch would have to handle in a given day.
24 And that number is about 50, between 48 and 57.

25 As I think we heard some testimony yesterday there is

1 about a minute is the time period it takes to process a
2 deposit at a teller, so that would mean the teller at each
3 branch on average would be busy for about an extra hour.

4 So this really doesn't suddenly create this wholesale
5 opportunity to close tons of branches because branches are
6 important for a whole bunch of other reasons you don't want to
7 close them.

8 Q. What if it took four minutes as we heard from Mr. Kennedy
9 to deposit a check. Would that change your conclusion?

10 A. No.

11 Q. Let me ask you if we can sort of summarize some of what
12 you've done. And can you see the easel from where you are,
13 Doctor Vellturo? Can you see it okay?

14 A. Let me slide a bit.

15 THE COURT: You're welcome to stand up if it would
16 help.

17 THE WITNESS: Thank you, Your Honor.

18 Q. (BY MR. STONE) We've seen two kinds of license
19 agreements or royalties. One is a lump sum and one is a
20 per-transaction number. Is that right?

21 A. Yes.

22 Q. And can we compare the various numbers to what was Mr.
23 Kennedy's analysis and to compare them to what you found in
24 your various analysis?

25 A. Yes.

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1 that a fair way to represent that on this chart?

2 A. Sure.

3 Q. Okay. And what else do we have on a per transaction
4 basis?

5 A. Well, we have the two offers that USAA made to the
6 Florida banks. Mr. Epstein spoke about the fact that USAA was
7 ready to sign those agreements if the parties agreed. So it
8 was a bona fide offer, they were ready to sign, and that was
9 about 6 cents a transaction for the whole portfolio.

10 Q. Okay. And the Bremer agreement was just for the four
11 patents in this case?

12 A. That's right -- well, I derived the 3 cents by accounting
13 for the fact that there were other patents in there. That was
14 my citation analysis that we went through.

15 Q. And so the dollar and SunCoast ones were for what was
16 then the entire portfolio?

17 A. That's right.

18 Q. And what figure does Mr. Kennedy put forth as what he
19 thinks would be a reasonable royalty on a per-transaction
20 basis?

21 A. It's just north of \$3 per mobile transaction.

22 Q. I'll just put \$3. And do we also know what the cost is
23 of the entire system that is provided by NCR?

24 A. That's true. NCR, where you get all the software you
25 need for a mobile banking system, that was 12 cents per

1 transaction.

2 Q. So do the two demonstratives that we have just shown
3 compare your analysis to the analysis done by Mr. Kennedy?

4 A. Yes.

5 Q. In your opinion, Doctor Vellturo, what is a reasonable
6 royalty if the jury in this case was to find the patents valid
7 and infringed?

8 A. On a discounted basis, that number is \$8 million as a
9 lump sum payment. And on a non-discounted basis, it's \$10.5
10 million.

11 Q. Now, if you were to allocate that \$8 million on a
12 discounted basis, how much would you attribute to the three
13 patents that we sometimes call the 2006 patents and how much
14 would you apportion to the 2009 patent that we sometimes call
15 the auto-capture patent?

16 A. Right. So the patent citation analysis is really helpful
17 here, too, because I can look at the value of each of the
18 patents individually, and here I represent that.

19 With respect to the 2006 patent family, the value of the
20 '432 Patent is less than one percent. That's one of those
21 lesser patents we talked about. The '605 Patent is 41
22 percent. The '681 Patent is also 41 percent, and the '571 is
23 18 percent.

24 Q. And do these percentages, are they applied to the \$8
25 million if you reduce it to net present value?

1 A. That's right.

2 Q. And are they applied to the 10.5 million if you don't
3 take into account net present value or the desirability of
4 getting money today as opposed to money out in the future?

5 A. Yes.

6 Q. Thank you.

7 MR. STONE: Pass the witness, Your Honor.

8 THE COURT: Cross-examination?

9 MR. SHEASBY: Your Honor, I'm going to pass out a
10 set of binders to my co-counsel.

11 THE COURT: That's fine. Are you going to use this
12 chart, Mr. Sheasby?

13 MR. SHEASBY: I am not, and I will remove it.

14 THE COURT: Turn it to a clean sheet, please.

15 Do we need to maintain the seal on the courtroom for
16 cross?

17 MR. SHEASBY: We do, Your Honor.

18 THE COURT: All right. Let me know if we get to a
19 point where it can be unsealed.

20 CROSS EXAMINATION

21 BY MR. SHEASBY:

22 Q. Good afternoon, Doctor Vellturo.

23 A. Good afternoon, Mr. Sheasby.

24 Q. It's nice to speak with you again. We've actually gotten
25 to chat twice before. Correct?

1 A. That's true.

2 Q. And I want to start out by speaking about areas of
3 agreement. So my ear was pricked. You said there were a list
4 of things that you and Mr. Kennedy who did a damage analysis
5 on behalf of USAA have -- you agree on. You gave a list, but
6 I noticed that there are some things that weren't on the list.
7 So I want to go over them. We can talk about them.

8 MR. SHEASBY: So let's go to PDX 10.5, Mr. Huynh.
9 This is Mr. Kennedy's demonstratives.

10 Q. (BY MR. SHEASBY) So another area where you and Mr.
11 Kennedy agree is that there -- if the jury finds infringement
12 in 2021, there are over 900,000 accounts using the infringing
13 MRDC system per month. Correct?

14 A. I think -- with respect to all the patents, I believe
15 that's correct. I'd have to go back and look whether that
16 applies if only some of the patents infringe.

17 Q. With respect to all the patents --

18 A. Okay.

19 Q. -- it's 900,000 per month. Correct?

20 A. That's accounts. I'm just reading the chart. I see
21 that.

22 Q. And you agree with that. Correct?

23 A. That sounds right.

24 Q. And over the infringement period in this case which
25 you're required to assume. Correct?

1 A. Yes, that's right.

2 Q. There is over 105,800,000 infringing MRDC deposits.
3 Correct?

4 A. Right. They're accused. I understand.

5 Q. Well, they're not accused. You must assume they are
6 infringing.

7 A. Oh, I'm sorry. They are accused in this case. For the
8 purposes of my work, I assume there's infringement. So fair
9 enough.

10 Q. And the dollar amounts of those infringing MRDC deposits
11 is \$54,489,167,000 [sic]. Correct?

12 A. I'm not sure you read that exactly correct. I mean, I
13 see the number.

14 Q. It's \$55 billion and a number of digits after that.
15 Correct?

16 A. That's the amount of dollars that went into people's bank
17 accounts.

18 Q. Using the infringing system.

19 A. Right. Using the accused mobile deposit system.

20 Q. Which you're required to assume is infringing.

21 A. Agreed.

22 Q. And there is also another area in which you and Mr.
23 Kennedy agree.

24 MR. SHEASBY: Let's go to the next slide, Mr. Huynh.

25 Q. (BY MR. SHEASBY) The standard for damages is

1 promulgated, which means it's handed down by our United States
2 Congress. Correct?

3 A. Yes.

4 Q. And the standard for damages is not a reasonable royalty;
5 it's no less than a reasonable royalty. Correct?

6 A. I see that language, yes.

7 Q. And, in fact, in other fora, you've taken the position
8 that the jury is entitled to award damages higher than a
9 reasonable royalty. Correct?

10 A. In some instances, the plaintiff is seeking what are
11 called lost profits damages, and those are very commonly
12 higher than a reasonable royalty. USAA is not seeking that
13 here.

14 Q. Well, to be clear, you've testified that a reasonable
15 royalty should be the floor that the damages can't go below,
16 though they may be higher. Correct?

17 A. Yes.

18 MR. SHEASBY: And let's go to black, Mr. Huynh.

19 Q. (BY MR. SHEASBY) Some patents can be worth hundreds of
20 millions of dollars. Correct?

21 A. It's rare, but it happens.

22 Q. Some patents can be worth hundreds of millions of
23 dollars. Correct?

24 A. Correct.

25 MR. SHEASBY: And let's go to PDX 1.14, Mr. Huynh.

1 Q. (BY MR. SHEASBY) So this is one of the claims of the
2 patents-in-suit. Correct?

3 A. You're representing to me this is the entire claim?

4 Q. This is the entire claim. I can represent that to you,
5 Doctor Vellturo.

6 A. I see it.

7 Q. And you said something. You said this is one of those
8 not so valuable patents. Correct? '432 Patent?

9 A. Yes.

10 Q. And you said the '432 Patent only covered a
11 feature-correct?--which is presenting a check.

12 A. Well, those three patents together cover that feature in
13 the 2006 family.

14 Q. The claim and our property right is defined by every
15 single element in this patent claim. Correct?

16 A. I disagree with that.

17 Q. You disagree that USAA's property right is what's defined
18 by the claim of this patent?

19 A. I don't disagree with that. That's certainly true.

20 Q. Our property right, the metes and bounds of the property
21 we own, are defined by the scope of this claim. Correct?

22 A. I'm not a lawyer, but that's my understanding.

23 Q. And, in fact, you cannot identify anything that is
24 necessary from mobile remote deposit capture that is not
25 covered by the claims of the USAA patents. Correct?

1 A. I disagree with that.

2 Q. Sir, you cannot identify anything that is necessary for
3 mobile remote deposit capture that is not covered by the
4 claims of USAA's patents. Correct?

5 A. I'm sorry. I just don't really think about it that way.
6 I think what can you do with the patented invention that you
7 can't do without it, and that's the way I think about it. And
8 I'm not sure that squares with what you're asking me --

9 Q. Okay?

10 A. -- so I'm not sure how to answer your question.

11 Q. Why don't we look at your deposition --

12 A. Okay.

13 Q. -- and see how you answered it then. It's volume 2,
14 lines 366:25 to 367, lines 24?

15 THE COURT: Let me caution you gentlemen to make
16 sure you don't speak over each other --

17 THE WITNESS: Yes, Your Honor.

18 THE COURT: -- as you go back and forth.

19 THE WITNESS: I'm sorry. Mr. Sheasby, where are you
20 directing me?

21 Q. (BY MR. SHEASBY) 366, line 25, to 37, line 4.

22 A. I see that testimony.

23 Q. All right. Let's publish it.

24 MR. STONE: Your Honor, object. It's not at all
25 inconsistent with what he just said.

1 MR. SHEASBY: I believe it is inconsistent.

2 THE COURT: Once you've refreshed his recollection,
3 you need to ask the question again. And if he gives an answer
4 inconsistent with his prior statement, then you can ask for
5 leave to publish it.

6 Q. (BY MR. SHEASBY) So the truth is, you can't identify
7 anything that is necessary for MRDC that is not covered by the
8 claims of USAA's patents. Correct?

9 A. And as I said, I think, three or four questions ago, you
10 know, I'm not a technical expert, but as an economist thinking
11 about the value of a claim, that's not how I think about it.

12 Q. Okay.

13 A. As I said here in my deposition, I said, I don't
14 understand your question.

15 Q. So let's publish it then.

16 A. Okay.

17 MR. STONE: Your Honor, it's not inconsistent with
18 the answer he just gave. I object to publishing it. May we
19 approach?

20 THE COURT: Yes, you may approach the bench.

21 (The following was had outside the hearing of the
22 jury.)

23 THE COURT: I don't have the deposition. If his
24 answer was, I don't understand the question, I don't know how
25 that could be an inconsistent answer.

1 MR. SHEASBY: His answer was, I can't answer the
2 question.

3 MR. STONE: Here's his answer at the very top. My
4 concern with any publication, I have an additional concern
5 which is the next question and answer --

6 MR. SHEASBY: We won't publish that, Your Honor.

7 MR. STONE: -- which is highly prejudicial.

8 MR. SHEASBY: We would not publish that.

9 THE COURT: All right. I'll grant leave to publish
10 page 367, lines 1 through 4.

11 MR. SHEASBY: Thank you.

12 THE COURT: Nothing else.

13 MR. SHEASBY: And with your permission, I'm going to
14 go back and make sure that's all that's published.

15 THE COURT: That's fine.

16 MR. SHEASBY: Thank you, Your Honor.

17 (The following was had in the presence and hearing
18 of the jury.)

19 MR. SHEASBY: Madame Courtroom Deputy, could you
20 turn off the system so we could prepare for the minor portion?
21 Thank you.

22 (Pause in proceedings.)

23 MR. SHEASBY: Let's publish that, Mr. Huynh. We
24 need to do one more line above that, Mr. Huynh.

25 Can you put it back down just briefly?

1 I apologize for the delay, Your Honor. We're now
2 prepared.

3 THE COURT: You may publish this excerpt from his
4 deposition.

5 Q. (BY MR. SHEASBY) Question: "What is necessary for
6 mobile remote deposit capture that is not covered by the
7 claims of USAA's patents?"

8 Answer: "I don't interpret claims of patents. I can't
9 answer that question for you."

10 Did I give your testimony accurately?

11 A. Yes.

12 Q. Now, there actually is someone who has expertise in the
13 banking industry whose opinions you relied on. Correct?

14 A. Yes.

15 Q. His name was Mr. Webster. Correct?

16 A. Yes.

17 Q. Mr. Webster's not going to testify today. Correct?

18 A. I don't know.

19 MR. SHEASBY: So let's go back up to PDX 1.14.

20 Q. (BY MR. SHEASBY) So when the jury considers your
21 credibility as a witness, they can take into account whatever
22 instructions the Judge gives them as to what defines the scope
23 of our invention. Correct?

24 A. Well, I'm not really the expert on the scope of the
25 invention so I'm not sure how my credibility would factor into

1 that issue. But, of course, the jury, as I understand it, has
2 latitude to decide the credibility of my testimony.

3 Q. And just to be clear, you said to the ladies and
4 gentlemen of the jury you're not an expert on the scope of
5 these claims. Correct?

6 A. I'm not a technical expert on the claims. That's not
7 what I'm here to do, as I said at the start of my testimony.

8 Q. You're not an expert on the scope of the claims, are you,
9 Professor Vellturo?

10 A. I am not.

11 MR. SHEASBY: Let's take that down.

12 Q. (BY MR. SHEASBY) Now, I want to talk about this
13 alteration that was made after PNC was formally served in
14 federal court with a patent infringement lawsuit. And just to
15 level set, the damages that the jurors will award are for the
16 period before this modification occurred. Correct?

17 A. And -- I'm sorry. I'm -- I want to make sure we're clear
18 on what this modification means in your question. Do you mean
19 4.20.1?

20 Q. Yes, sir.

21 A. Yeah. My understanding is there are no damages that USAA
22 is seeking on transaction volumes that were undertaken through
23 4.20.1.

24 Q. In this case.

25 A. In this case, yes.

1 Q. And you referred to 4.20.1 in your expert report as a
2 non-infringing alternative. Correct?

3 A. I referred to it that way at some point. I think it's in
4 my report.

5 Q. Would you take my representation that again and again and
6 again you refer to 4.20.1 as a non-infringing alternative in
7 your report?

8 A. That was my understanding for part of the work I did.

9 Q. The truth is you don't know whether there are USAA
10 patents that 4.20.1 infringes. Correct?

11 A. I don't do infringement. I wouldn't know because I'm not
12 a technical expert so I don't know.

13 Q. There was a technical expert in this case for PNC. His
14 name was Doctor Bovik. Correct?

15 A. Well, there is. He is still here. I see him.

16 Q. He testified yesterday?

17 A. I saw him, yes.

18 Q. You did not -- you actually claim that PNC's technical
19 experts told you that 4.20.1 was a non-infringing alternative.
20 Correct?

21 A. That's what I recall, yes.

22 Q. But the reality is under oath yesterday, Doctor Bovik
23 testified that he did not render an opinion that 4.20.1 is a
24 non-infringing alternative. Correct?

25 A. I don't remember the exact testimony, but as I indicated

1 earlier, I don't need that fact for my model to work.

2 MR. SHEASBY: Your Honor, I move to strike
3 everything after, I do not remember the exact testimony.

4 THE COURT: I'll sustain that. The witness needs to
5 limit his answers to the questions asked.

6 THE WITNESS: Yes, Your Honor.

7 THE COURT: Let's proceed.

8 MR. SHEASBY: May I refresh the witness'
9 recollection about the testimony that occurred yesterday, Your
10 Honor?

11 THE COURT: How do you propose to do that?

12 MR. SHEASBY: Publish the testimony, Your Honor.

13 MR. STONE: Objection, Your Honor. This was
14 something we were not permitted to do earlier. I don't think
15 it would be fair now to allow others to do something that we
16 were not allowed to do.

17 THE COURT: The jury heard Doctor Bovik's testimony
18 yesterday. And if this witness doesn't remember what Doctor
19 Bovik said, I don't see any basis for you to publish any
20 documents.

21 MR. SHEASBY: I understand your instruction. Thank
22 you, Your Honor.

23 MR. STONE: Thank you, Your Honor.

24 THE COURT: All right. Let's move on.

25 Q. (BY MR. SHEASBY) So just so the record is clear, you sat

1 through the entire testimony yesterday. Correct?

2 A. Yes.

3 Q. And you don't remember Doctor Bovik saying that he didn't
4 render an opinion that 4.20.1 is a non-infringing alternative.

5 A. I don't remember him specifically saying that.

6 Q. But you do remember testifying under oath that you relied
7 on him for the conclusion that 4.20.1 is a non-infringing
8 alternative.

9 A. Right. I'm not a technical expert.

10 Q. In your entire career, you have never used as a
11 non-infringing alternative a product that's been accused of
12 infringement by a plaintiff. Correct?

13 A. I don't remember whether that happened one way or the
14 other. I've been around for a long time.

15 MR. SHEASBY: And why don't we pull up PDX 14.29.
16 29, Mr. Huynh. Thank you.

17 Q. (BY MR. SHEASBY) You were here for Professor Conte's
18 testimony. Correct?

19 A. Yes.

20 Q. Do you remember what Professor Conte said in his
21 testimony?

22 A. Not exactly, but in substance I believe so.

23 Q. You remember Professor Conte showing the slide of these
24 three USAA patents. Correct?

25 A. I do.

1 Q. And do you remember him testifying that this 4.20.1
2 system does not avoid infringement because of these three
3 patents?

4 MR. STONE: Objection, Your Honor. It's a MIL --
5 MIL violation and --

6 THE COURT: Approach the bench.

7 (The following was had outside the hearing of the
8 jury.)

9 THE COURT: You guys are about to wear me out. You
10 know that?

11 MR. STONE: Sorry, Your Honor.

12 THE COURT: What's the MIL violation you are
13 asserting?

14 MR. STONE: He's now bringing into this PNC 3 issues
15 as to whether or not these patents are infringed by the
16 current app that is deployed by PNC Bank. That's not an issue
17 in this case and we have clear direction not to bring in
18 whether there's infringement from PNC 3 issues in this case.
19 We're trying four patents here, not these three other
20 Defendants.

21 THE COURT: Defendants MIL 1B says there is to be no
22 testimony regarding the existence of the PNC 3 or BBVA cases.
23 I haven't heard anything about PNC 3 cases. I've heard about
24 patents that, though it's not been mentioned to this jury, are
25 the patents at issue in PNC 3. I don't find there's been a

1 MIL violation.

2 MR. STONE: Further, Doctor Conte's report clearly
3 does not allow him to say that these patents are infringed by
4 4.20.1 and he didn't say that. And now they're asking
5 questions about whether or not they infringe.

6 MR. SHEASBY: I actually used the exactly language
7 in Professor Conte's report, they do not avoid infringement.

8 THE COURT: All right. I'm going to overrule the
9 objection.

10 MR. SHEASBY: Thank you, Your Honor.

11 (The following was had in the presence and hearing
12 of the jury.)

13 THE COURT: All right. Objection's overruled.
14 Let's proceed.

15 MR. SHEASBY: Let's pull back up the --

16 Q. (BY MR. SHEASBY) Now, these are three patents that are
17 different from the patents-in-suit. Correct?

18 A. Yes.

19 Q. They're owned by USAA. Correct?

20 A. I see that, yes.

21 Q. They're actually in the same 2006 patent family.
22 Correct?

23 A. I don't remember. I think so.

24 Q. And why don't we look at one of those.

25 MR. SHEASBY: Let's turn to PX 1377.

1 Q. (BY MR. SHEASBY) And it was issued on December 29th,
2 2015. Do you see that?

3 A. Yes.

4 Q. To USAA. Do you see that?

5 A. I do.

6 Q. And it has Mr. Oakes' name and Mr. Prasad's name. Do you
7 see that?

8 A. I used to. You crossed them out, but -- yes, there you
9 go. Yes, I see them.

10 Q. It's a reasonable request, Doctor Vellturo. It's a
11 reasonable request. And let's --

12 THE COURT: Mr. Sheasby, you don't need to make
13 statements about what is and isn't a reasonable request.
14 Sidebar comments from the podium are not permitted.

15 MR. SHEASBY: Thank you, Your Honor.

16 MR. SHEASBY: Let's go to --

17 THE COURT: Ask the witness questions.

18 MR. SHEASBY: Let's go to page 24.

19 Q. (BY MR. SHEASBY) And I'll just -- this is claim 1 of the
20 '136 Patent. Correct?

21 A. That appears to be claim 1, yes.

22 Q. And if I remember correctly, you focused on, in this
23 4.20.1 application, the absence -- the deactivation of
24 auto-capture and the absence of display of images. Correct?

25 A. Well, the absence of displaying a photo of the check to

1 the user before it's submitted.

2 Q. And does this claim of the '136 Patent say anything about
3 auto-capture or display of the photo to the user before it is
4 submitted?

5 A. I don't see language specific to that, but I am not a
6 reader of patents from a technical standpoint. I read them as
7 a layperson, just like anyone else would.

8 Q. You read them just like the jury will. Correct?

9 A. Yeah.

10 Q. You're not technically capable of telling me what mobile
11 remote deposit capture systems are commercially acceptable
12 that do not infringe USAA's patents. Correct?

13 A. I don't bring technical capability to this case. I'm --
14 I'm here as an economist and a licensing professional.

15 Q. And you agree that the jury, in weighing your testimony,
16 can consider the fact that you repeatedly in your report
17 define 4.20.1 as a non-infringing alternative. Correct?

18 A. I don't agree with that. My report is pretty clear that
19 it's my understanding from technical experts that it's a
20 non-infringing alternative. I don't, as an economist, decide
21 what infringes and what doesn't. That's not what I was here
22 for this morning, this afternoon, and I -- I don't do that in
23 my reports.

24 Q. Your opinion is only as good as the input you receive
25 from other folks. Correct?

1 A. In some regards, yes.

2 Q. And one of the inputs you received from Doctor Bovik is
3 that 4.20.1 is a non-infringing alternative. Correct?

4 A. That's one input I received.

5 Q. And so the jury can consider whether that input was
6 accurate. Correct?

7 A. Well, I addressed that in my direct testimony. My
8 ultimate finding is not dependent on that.

9 MR. SHEASBY: That was non-responsive. I move to
10 strike.

11 THE COURT: Sustained.

12 That was not what the question called for, Doctor
13 Vellturo. You need to limit your answers to the questions
14 asked.

15 THE WITNESS: Yes, sir.

16 Q. (BY MR. SHEASBY) The jury can consider the quality of
17 the input that you relied on that you assumed 4.20.1 as a
18 non-infringing alternative. Correct?

19 A. Yes.

20 Q. Now, you had some slides where you talked about the
21 period before and after this 4.20.1 modification was released.
22 Correct?

23 A. Yes.

24 Q. And you showed, for example --

25 MR. SHEASBY: I'm going to have to do this on the

1 elmo.

2 Q. (BY MR. SHEASBY) You showed, for example, this slide
3 which was a before and after. Correct?

4 A. Yes.

5 Q. And I notice you didn't have any dates on the before and
6 after period. No dates there. Right?

7 A. That's true.

8 Q. You showed this slide, and it shows that that PNC removed
9 the disputed features--and I think that's your language for
10 the release of the 4.20.1--in the second quarter of 2021.
11 Correct?

12 A. Yes.

13 Q. And I notice that your lines go out just through the
14 third quarter of 2021. Correct?

15 A. Yes.

16 Q. Your lines don't extend beyond the third quarter of 2021.
17 Correct?

18 A. These lines do not.

19 MR. SHEASBY: Let's go to PDX 14.30.

20 Q. (BY MR. SHEASBY) So this is PX 599. It's an internal
21 PNC document. And it depicts the net promoter score that
22 occurred with the mobile device in the period around the
23 launch of that 4.20.1. Correct?

24 A. Yes, some of these months are from that period.

25 Q. Some of these months are before, some of these months are

1 after. Correct?

2 A. They're mostly from after. The June 2021 is kind of a
3 transitional month where some people had 4.20.1 but not
4 everyone had it yet.

5 Q. So this is before. Correct?

6 A. Yes.

7 Q. And what we see is that by October 2021, there is a 20
8 point decrease in net promoter score and a hundred percent
9 increase in the number of negative detractors. Correct?

10 A. I see the drop from September to October.

11 Q. Thank you.

12 And to be as precise as we can, I think what you're
13 saying is -- to the ladies and gentlemen of the jury is you
14 didn't see anything in the financials from before versus after
15 the launch of this 4.20.1. Fair?

16 A. I didn't understand that question. I'm sorry.

17 Q. You testified to the ladies and gentlemen of the jury
18 that you didn't see any meaningful changes in PNC's financials
19 from before 4.20.1 versus after 4.20.1. Fair?

20 A. That related to the change in the use -- in the type of
21 remote deposit. So it wasn't a global statement. It was with
22 respect to remote deposit.

23 Q. Well, to be clear, the figure you showed the
24 jury -- let's go back to the elmo -- was total accounts and
25 checking accounts, and you said there was no change in total

1 accounts and checking accounts. Correct?

2 A. Right.

3 Q. Not specific to MRDC accounts. You told the jury about
4 total accounts and checking accounts. Correct?

5 A. In this slide, yes.

6 Q. And you said, no change from before or after in these
7 financials. Correct?

8 A. That's what I said.

9 Q. And to be as precise as we can, the transition to this
10 4.20.1 application was complete by the end of the second
11 quarter of 2021. Correct?

12 A. End of July sounds right.

13 Q. And you didn't disclose in your report --

14 A. I'm sorry. I'm sorry. The end of the second quarter is
15 the end of June. That's my mistake.

16 Q. And you don't disclose in your report that PNC's deposits
17 decreased by \$4 billion from the third quarter of 2021 as
18 opposed to the second quarter of 2021. Correct?

19 A. That's not in my report.

20 MR. SHEASBY: And if we look at PX 1476, and let's
21 scroll down to PDF page 4, Mr. Huynh.

22 Q. (BY MR. SHEASBY) So this 4.0, in parentheses, meaning
23 there was a \$4 billion decrease in net deposits from July
24 30th, 2021, to 9/30/2021. Correct?

25 A. I see that drop.

1 Q. And it's actually only a small portion of PNC's total
2 deposits. It's only about one percent. Correct?

3 A. I -- that's not quite right, sir. I'm sorry.

4 Q. No problem. What does that one percent number mean?

5 A. So that one percent number is a drop. But during this
6 period, it -- the deposit base is changing because -- I'm
7 sorry. I thought you want an explanation. Do you want me to
8 stop?

9 MR. SHEASBY: I move to strike as non-responsive.

10 THE COURT: I'll overrule. He's attempting to
11 answer your question.

12 Go ahead and finish the answer, please.

13 THE WITNESS: Right. So in the third quarter of
14 2021, PNC is in the process of acquiring another fairly large
15 bank, BBVA. And what you're seeing here, and the audio to
16 this earnings call tells you this, that there were customers
17 of BBVA that, when the merger was completed, moved their
18 balances elsewhere. That's what's causing this, and that's
19 exactly what the representatives of PNC said in that audio.

20 Q. (BY MR. SHEASBY) So let's be clear. What you just said,
21 none of that is in your report. Correct?

22 A. That's true.

23 Q. None of it was what you told me at your deposition.
24 Correct?

25 A. I didn't tell you that in my deposition.

1 Q. And, in fact, what we know is that there was a 4 billion
2 drop between 9/30/2021 and 6/30/21. Correct?

3 A. As reported, yes.

4 Q. And there was an event that occurred between 9/30/21 and
5 6/30/21, and that was the release of 4.20.1. Correct?

6 A. No, that's not correct. By 6/30 -- by June 30th, 2021,
7 version 4.20.1 had already been released.

8 Q. So in the quarter where we saw this \$4 billion change,
9 that was right after the release of 4.20.1. Correct?

10 A. This change is from the second quarter to the third
11 quarter, and 4.20.1 was introduced and largely brought into
12 being during the second quarter, during part of it.

13 Q. Now, why don't you look at IX 27, which is tab 34 in your
14 B binder. Why don't you turn to page 6 of that?

15 MR. SHEASBY: And let's keep this page up. Let's
16 keep that page up.

17 THE WITNESS: I'm sorry. Where I am going? I
18 apologize.

19 Q. (BY MR. SHEASBY) You have a binder that says B on it.

20 A. I'm sorry. I have it.

21 Q. No problem. Turn to tab 34.

22 A. I'm at tab 34.

23 Q. And if you turn to page 6?

24 A. Yes.

25 Q. This reports on the change in deposits from the third

1 quarter versus the -- the fourth quarter versus the third
2 quarter of 2021. Correct?

3 A. That's one of the things it shows, yes.

4 Q. It shows another \$5 billion decrease in deposits.
5 Correct?

6 A. Yes, and we talked about that.

7 Q. So you didn't disclose to the jury that there was a \$4
8 billion drop in deposits in your direct testimony. Correct?

9 A. That was not part of my direct testimony.

10 Q. You didn't analyze it in your report. Correct?

11 A. It was not in my report.

12 Q. And you agree the jury can look at PX 1470.4 when they
13 assess your credibility. Correct?

14 A. I'm not the expert in what's admitted and what's not.
15 I'm assuming that if it has a PX number, it's been admitted
16 and the jury can look at it.

17 Q. And you performed for this part of your analysis on the
18 impact of 4.20.1 something called a regression analysis.
19 Correct?

20 A. Yes. That's the big study I referred to.

21 Q. You didn't explain what the regression was, but you told
22 the jury you did a regression.

23 A. I thought I did explain it, but you're entitled to your
24 view.

25 Q. Your regression didn't take into account the option of

1 checks being deposited at a bank other than PNC. Correct?

2 A. That's true.

3 Q. So when the jury looks at your slides, you say accounts
4 are the same, no problem, but you didn't take into account the
5 fact that a customer could choose to deposit their check at
6 another bank. Correct?

7 A. I took that into consideration. I saw data on that exact
8 issue, and actually I reported it to the jury during my
9 testimony.

10 Q. Your regression doesn't take into account the option of
11 checks being deposited at a bank other than PNC. Correct?

12 A. My regression doesn't do that. That's true.

13 Q. And the jury can also take that into account when
14 assessing the credibility of your opinions. Correct?

15 A. Sure.

16 Q. Now, you also did some analysis based on some agreement
17 in this case. Correct?

18 A. Yes.

19 Q. Doctor Vellturo, you and I have something in common and
20 it's not that I have a PhD from MIT. Do you know what it is?

21 A. I'd rather not guess.

22 Q. We both have daughters. We both have lots of
23 auto-captures. Correct?

24 A. I forget. Do you have two?

25 Q. I have two, and I raised one. So I've got three.

1 A. Three, and I have five.

2 Q. And when you were -- when the kids were little, did you
3 ever play a game called One of These Things Are Not Like The
4 Other?

5 A. I think we watched Sesame Street together where we saw
6 that game, but I don't remember us actually playing it
7 independently.

8 Q. So one of the things that you try to do is you try to
9 analogize agreements with Bremer Bank and offers to Dollar and
10 SunCoast to the hypothetical negotiation between USAA and PNC.
11 Fair?

12 A. I undertake an exercise along those lines, yes.

13 MR. SHEASBY: So let's have PDX 14.8.

14 Q. (BY MR. SHEASBY) PNC is 37 times larger than Bremer.
15 Correct?

16 A. Using what measure? I can't tell -- I'm sorry. I see
17 the 37.

18 Q. Assets.

19 A. So that's what size of banks means?

20 Q. Yes, sir.

21 A. Okay. With that representation, I see that difference.

22 Q. You have no reason to doubt it. Correct?

23 A. I haven't studied that specifically.

24 Q. You didn't study the difference in size between PNC Bank
25 and Bremer?

1 A. The per-unit rate takes care of that for me so I didn't
2 need to study it.

3 MR. SHEASBY: I move to strike as non-responsive,
4 Your Honor.

5 THE COURT: Did you study or did you not study it?
6 Why you didn't study if you didn't is not what the question
7 called for. The question was, did you study it or did you
8 not, and that's the one you should have answered.

9 I'll sustain the objection. Restate the question or move
10 on, counsel.

11 Q. (BY MR. SHEASBY) Did you or did you not study the
12 difference in the size of Bremer and PNC?

13 A. I studied differences in aspects of the two banks,
14 including size.

15 Q. Do you have any factual basis to disagree with the fact
16 that PNC is 37 times larger than Bremer?

17 A. Larger in terms of assets?

18 Q. Yes, sir.

19 A. I don't.

20 Q. Do you have any factual basis to disagree with the fact
21 that PNC has 12 times more mobile accounts than Bremer?

22 A. I don't know where this Bremer number comes from, but I
23 do recognize the PNC number. So I can't answer your question
24 entirely, but I do recognize the 940,000 number.

25 Q. Did you investigate the number of mobile deposit accounts

1 that Bremer has?

2 A. I don't remember whether I looked at that specifically or
3 not.

4 Q. Okay. And the Bremer agreement was 50 cents per unit.
5 Correct?

6 A. No.

7 Q. The Bremer agreement was approximately 51 cents per check
8 deposit?

9 A. No.

10 Q. There was a running royalty in the Bremer agreement?

11 A. Yes.

12 Q. What was the running royalty?

13 A. 58 cents.

14 Q. And you didn't investigate whether PNC has 12 times more
15 mobile accounts than Bremer and is 37 times larger than
16 Bremer. Correct?

17 A. I don't remember studying those two statistics in my
18 work.

19 Q. And you said something --

20 MR. SHEASBY: Well, let's go to 14.9.

21 Q. (BY MR. SHEASBY) Do you have any factual basis to
22 disagree with the fact that PNC is 60 times larger than Dollar
23 Bank and SunCoast Bank?

24 A. No.

25 MR. SHEASBY: Now, let's go back one slide.

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(Redacted.)

1 Q. Now, Bremer was not accused of infringing a single patent
2 when it executed its license agreement. Correct?

3 A. Correct.

4 Q. Bremer didn't concede infringement or validity. Correct?

5 A. Correct.

6 Q. In fact, there's no evidence that Bremer was using any of
7 these patents when it voluntarily took a license agreement.
8 Correct?

9 A. I don't know one way or the other whether they were using
10 the inventions.

11 Q. And you certainly didn't investigate that in preparing
12 your report. Correct?

13 A. I'm not a technical expert. I did not.

14 Q. You didn't ask any other expert to assist you in that
15 process. Correct?

16 A. I did not.

17 Q. Now, this patent citation analysis is something that you
18 say economists use to value patents. Correct?

19 A. It appears in the economics literature largely. I think
20 it's in some licensing journals, too.

21 MR. SHEASBY: I move to strike as non-responsive
22 after 'yes', Your Honor.

23 THE COURT: I'll strike the entire answer. He
24 doesn't answer anywhere what you've asked for. He offers an
25 explanation that the question doesn't call for.

1 Once again, Doctor Vellturo, you're going to have to
2 limit your answers to the questions asked. This is not the
3 first time you've testified in an open court setting. You
4 know Mr. Stone's going to get a chance to follow up with
5 anything that he believes needs to be readdressed after you
6 answer the questions that are called for. So please limit
7 your answers to the questions called for. All right?

8 THE WITNESS: Yes, sir.

9 THE COURT: Go ahead, counsel.

10 Q. (BY MR. SHEASBY) You testified to the ladies and
11 gentlemen of the jury that this is something economists use.
12 Correct?

13 A. Yes.

14 Q. Now, you've also participated in some licensing
15 negotiations. Correct?

16 A. Yes.

17 Q. And you've participated on behalf of a licensee, the
18 person paying the money. Correct?

19 A. Yes.

20 Q. And in every time that you've participated in a license
21 agreement in which you are representing the party paying the
22 money, a patentholder has never accepted your patent citation
23 analysis. Correct?

24 A. I don't remember them doing that.

25 Q. Okay. So to be clear, you presented to the jury a patent

1 citation analysis. Correct?

2 A. Yes.

3 Q. You said it's something that economists use. Correct?

4 A. Yes.

5 Q. USAA, are they economists or are they an insurance
6 mutual?

7 A. They're not economists.

8 Q. Is PNC an economist or are they a national retail bank?

9 A. They are a national retail bank.

10 Q. And this patent citation analysis in the real world, you
11 have never observed a patentee accepting it when you were
12 representing the licensee. Correct?

13 A. I don't remember that happening. I'm sorry. I don't
14 remember that happening.

15 Q. You have never valued intellectual property that covers
16 consumer banking technology. Correct?

17 A. Correct.

18 Q. You -- before this case, you had never done any research
19 studies directly on mobile banking. Correct?

20 A. I need -- I'm sorry. I need to understand what you mean
21 by mobile banking.

22 Q. Before this case, you have not done research studies
23 directly on mobile banking. Correct?

24 A. If you leave out ATMs, the answer is yes.

25 Q. Sir, you have never directly done any work on mobile

1 banking research projects. Correct?

2 A. Yes.

3 Q. And you're not a person of ordinary skill in the art.
4 Correct?

5 A. Agreed.

6 Q. And you estimate that you've participated in the
7 negotiation of approximately 12 licenses. Correct?

8 A. I've participated in more than 12.

9 Q. Your estimate is that you participated in 12 license
10 agreements, license negotiations. Correct?

11 A. No, that's not the right number.

12 Q. All right. Why don't we turn to your deposition. This
13 is your first volume at lines 10 -- page 10, line 10 through
14 21.

15 A. I'm sorry. What page?

16 Q. Page 10, lines 10 through 21.

17 A. Okay.

18 Q. Your estimate is that you participated in 12 license
19 negotiations. Is that correct?

20 A. Given the limits you applied to my experience in that
21 question, 12 was the correct number.

22 Q. And the question was you participated in 12 license
23 negotiations. That was the question. Correct?

24 A. I see that testimony, yes.

25 Q. So for the ladies and gentlemen of the jury, the answer

1 under oath in your deposition was that you participated in 12
2 license negotiations. Correct?

3 A. That's what this page of my deposition says, yes.

4 Q. And you know that Mr. Kennedy has participated in over
5 200 licensing negotiations. Correct?

6 A. I heard that earlier, yes.

7 Q. You can be a fabulous economist but not necessarily be an
8 expert in license negotiations. Correct?

9 A. That's possible.

10 Q. For example, my wife and I have an OB we love. But when
11 our kids are sick, we don't take them to the OB. Perhaps
12 you've had that same experience.

13 A. When our children are sick, I don't take them to the OB.
14 That's true.

15 Q. You take them to an expert. Correct?

16 A. I take them to a different doctor, yes.

17 Q. A doctor who's an expert in the issue that ails them.
18 Correct?

19 A. Or general practitioner, depending on the nature of what
20 they need help with.

21 Q. Your resume is nine pages long, but nowhere in it do you
22 purport to be a licensing expert. Correct?

23 A. True.

24 Q. And the damages issue that we're faced with in this case
25 is a hypothetical negotiation. Correct?

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(Redacted.)

1 and center than that, Mr. Sheasby, and I'm telling you, stop
2 it?

3 MR. SHEASBY: Okay. I'll move on. Thank you, Your
4 Honor.

5 (The following was had in the presence and hearing
6 of the jury.)

7 MR. SHEASBY: Let's take that down.

8 Q. (BY MR. SHEASBY) The same patents can have different
9 value in the hands of different companies. Correct?

10 A. Yes.

11 Q. And you talk about an agreement with NCR. Correct?

12 A. Yes.

13 Q. It's 12 cents--correct?--per unit. That's what you
14 testified to the jury?

15 A. Per mobile deposit, that's the unit, yes.

16 Q. And you don't know if NCR has the patent rights to allow
17 PNC to use the MRDC system it is using. Correct?

18 A. I don't know.

19 Q. And there's not sufficient information available for you
20 to know how much more NCR would charge if they actually had
21 the patent rights that would allow PNC freedom to operate an
22 MRDC system. Right?

23 A. I don't have that information.

24 Q. So when -- you showed the ladies and gentlemen of the
25 jury this 12 cent per unit number--correct?--and Mr. Stone

1 actually wrote it up on the white board. Correct?

2 A. Yes.

3 Q. You're not aware of a single patent that NCR holds that
4 gives rights to the MRDC system. Correct?

5 A. I don't know one way or the other as I sit here.

6 Q. You don't know if PNC has any identifiable or appreciable
7 research and development budget. Correct?

8 A. Correct.

9 Q. And you agree that PNC's statements to investors state
10 that innovation is imperative and essential to their base.
11 Correct?

12 A. I remember seeing that, yes.

13 Q. In fact, PNC publicly states to its investors that with
14 regards to its business everything it does is dependent on
15 technology.

16 A. I remember seeing that.

17 Q. And you don't know how long it takes for customers to
18 turn based on the loss of a feature or product at a bank.
19 Correct?

20 A. I don't.

21 Q. And you don't know what the impact would be on customer
22 retention if PNC had to cease using all of USAA's patents.
23 Correct?

24 A. I haven't studied that question.

25 MR. SHEASBY: I pass the witness.

1 THE COURT: Is there redirect by the Defendant?

2 MR. STONE: There is, Your Honor. Thank you.

3 THE COURT: All right. Do we need to maintain the
4 courtroom as sealed for the redirect?

5 MR. STONE: I don't believe so.

6 THE COURT: Then I'll order the courtroom unsealed
7 and direct the Court Security Officer to invite the public to
8 return.

9 And we'll proceed with redirect as soon as you're ready,
10 Mr. Stone.

11 MR. STONE: Thank you, Your Honor.

12 (Courtroom unsealed.)

13 REDIRECT EXAMINATION

14 BY MR. STONE:

15 Q. Doctor Vellturo, you were shown a set of materials that
16 go along with an investor call. Do you recall that?

17 A. Yes.

18 Q. We have the transcript from that investor call.

19 MR. STONE: Could we bring that on the screen?

20 MR. SHEASBY: Your Honor, it's hearsay and I object.

21 MR. STONE: Your Honor, it has the transcript where
22 it is explained exactly where the numbers came from that he
23 was asked about and he said in his cross examination-testimony
24 that he listened to the transcript.

25 MR. SHEASBY: I have no problem with --

1 THE COURT: Just a minute. What's the source of
2 this? This is not a pre-admitted exhibit?

3 MR. STONE: No. It's a publicly-available document
4 just like materials --

5 THE COURT: And you're using it for what purpose?

6 MR. STONE: To respond to the document that was also
7 not pre-admitted that Doctor Vellturo was shown.

8 MR. SHEASBY: To be clear, the document I showed was
9 a pre-admitted exhibit, Your Honor.

10 MR. STONE: The document was --

11 MR. SHEASBY: I object to this even being published
12 now, Your Honor.

13 MR. STONE: The document was not a pre-admitted
14 exhibit, I don't believe. It doesn't have an exhibit number
15 on it.

16 MR. SHEASBY: It was in fact pre-admitted.

17 MR. STONE: I take it back. It was pre-admitted.

18 THE COURT: Bring me the document that you want to
19 publish. Let me see it.

20 MR. STONE: I don't have it in hard copy, Your
21 Honor. I will just show you the text of it.

22 (The following was had outside the hearing of the
23 jury.)

24 THE COURT: Why hasn't the door been opened to this
25 with what you asked?

1 MR. SHEASBY: He already gave the explanation, and I
2 have no problem with giving him the same explanation.
3 My -- the document is hearsay and it hasn't been produced.

4 So the issue is not him giving the explanation and I
5 didn't even dispute that he gave that explanation. He's happy
6 to give the same explanation again, but that doesn't mean you
7 can publish hearsay to the jury. That's my only objection.

8 I don't mind if he says, I saw a document that said it.
9 No problem with that at all.

10 THE COURT: So he can recite hearsay, but he just
11 can't show a hard copy of hearsay. Is that your argument?

12 MR. SHEASBY: Well, he can inform what he read from
13 a document and give his opinion of it. That's what experts do
14 all the time. But I don't think he should show hearsay.

15 MR. STONE: Your Honor, this is not being offered
16 for the truth. It's being offered to explain exactly how he
17 previously answered the question that was asked him.

18 THE COURT: I think the door's been opened. You can
19 use the document.

20 MR. STONE: Thank you, Your Honor.

21 (The following was had in the presence and hearing
22 of the jury.)

23 THE COURT: Counsel, reapproach the bench, please.

24 (The following was had outside the hearing of the
25 jury.)

1 THE COURT: Just so there's no doubt in the record,
2 here is a hard copy of the email that was received earlier
3 today. Again, the email addressed to me shows it was copied
4 to both of you.

5 MR. SHEASBY: I just got it, Your Honor.

6 THE COURT: All right. Let's proceed.

7 MR. SHEASBY: I'd like to be able to review this
8 document before he shows it to the jury.

9 THE COURT: No. We're going to show it to the jury.
10 You can address it in additional cross if you want to.

11 (The following was had in the presence and hearing
12 of the jury.)

13 THE COURT: Let's proceed, Mr. Stone.

14 MR. STONE: Thank you, Your Honor.

15 Can we bring back up the transcript? Can we go to the
16 discussion of the increases and decreases in terms of
17 assets -- or deposits? Sorry.

18 Q. (BY MR. STONE) Do you recall being asked about the
19 slides that went with this transcript, Doctor Vellturo?

20 A. Yes.

21 Q. Did you either review the transcript of this call or
22 listen in on it at the time when it occurred?

23 A. I reviewed the transcript.

24 Q. If you see here in the transcript what it says is, Inside
25 of this PNC legacy deposits -- what does a PNC legacy refer

1 to? I'm directing you to the second sentence. It says PNC
2 legacy, and then it goes on to talk about BBVA-USAA deposits.
3 Do you see that?

4 A. I see legacy deposits, yes. Legacy deposits are deposits
5 associated with accounts that in the previous year and in the
6 current year, in both years they were PNC customers.

7 Q. And what does it say happened with respect to the amount
8 of deposits with respect to PNC legacy accounts?

9 A. They increased by \$5.4 billion.

10 Q. And then what happened in about September of 2021 with
11 respect to a bank acquisition that you referred to earlier?

12 A. PNC acquired another bank and a fairly sizable one known
13 as BBVA.

14 Q. And when they acquired BBVA in about September of 2021,
15 what happened with respect to some of the deposits that had
16 been with BBVA and then were transferred to PNC in connection
17 with that acquisition?

18 A. Those deposits went down.

19 Q. And is that described in this transcript?

20 A. Yes.

21 Q. And so when you were asked earlier what accounted for the
22 \$4 billion drop in total deposits at PNC comparing the two
23 quarters, what was your explanation before?

24 A. That that related to the transaction with BBVA, that
25 there were a bunch of non-legacy accounts, that is, accounts

1 that previously were at BBVA, that had -- that weren't
2 depositing as much or had moved their deposits elsewhere.

3 Q. Okay. So among PNC customers who had been with PNC
4 during the preceding time period, what happened with their
5 deposits?

6 A. They went up.

7 THE COURT: All right, Mr. Stone. We need to move
8 on.

9 MR. STONE: Thank you, Your Honor.

10 Q. (BY MR. STONE) Earlier today you were asked by Mr.
11 Sheasby about whether -- you were asked -- it was -- you were
12 asked about data that cut off in October of 2021. Correct?

13 A. Yes.

14 Q. Do you have data past October of 2021?

15 A. I do.

16 Q. Have you analyzed that data?

17 A. Yes.

18 Q. Is there a reason you haven't presented the data from
19 subsequent time periods in this case?

20 A. That data wasn't available to me to use at this trial.

21 Q. Was that because of objections that were made by USAA to
22 the use of data --

23 MR. SHEASBY: Your Honor, I object, and I seek a
24 sanction. It's a violation of a MIL and it's not accurate.
25 It is completely improper.

1 THE COURT: Just a minute, Mr. Sheasby. I sustain
2 the objection.

3 You are going into discovery issues before the Court, and
4 that's not proper, Mr. Stone. So I'm going to instruct you to
5 move on to your next question. You are not to inquire --
6 there are enough disputes between both sides against each
7 other as to how this case got put together. We are not going
8 to reopen those. They're not appropriate and they are
9 irrelevant for this jury.

10 So don't touch on those issues again, but let's move
11 forward.

12 Q. (BY MR. STONE) Did the data that you looked at through
13 October, was that consistent and supportive of all the
14 opinions you gave here today?

15 A. Yes.

16 Q. Have you been -- can you use data after October for
17 purposes of your opinion?

18 A. Here, I understand not.

19 Q. Okay. You were asked about the patent citation analysis
20 earlier. Do you recall?

21 A. Yes.

22 Q. And you were asked about whether you used it in
23 connection with negotiations of patent licenses. Correct?

24 A. Specific to licensees, correct.

25 Q. Yes. Specific to licensees. And is there -- would it be

1 useful in the context of those types of license agreements to
2 use your patent citation analysis there?

3 A. Typically you don't need it.

4 Q. Why's that?

5 A. Because most of those licenses are portfolio licenses
6 where you're getting rights to all the patents that someone
7 has. In that context, you don't really need to understand the
8 value of one patent over the other; the license is going to
9 cover all the patents.

10 Q. Have you testified to patent citation analyses in court
11 before?

12 A. I have.

13 Q. Have you written about it in other instances outside of
14 court?

15 A. Yes.

16 Q. When you've testified about it in court, have you on
17 occasion testified, at least one occasion presented that
18 analysis on behalf of a client of Irell & Manella, Mr.
19 Sheasby's firm?

20 A. Yes.

21 Q. And did you present it in the context of putting a value
22 on patents with respect to a reasonable royalty to be
23 determined in connection with a hypothetical negotiation?

24 A. Yes.

25 Q. On about how many occasions have you analyzed what would

1 happen in a hypothetical negotiation which is what we apply in
2 court?

3 A. I have evaluated at least 200 hypothetical negotiations.

4 Q. Earlier today, when Judge Gilstrap asked if USAA had any
5 objection to you being recognized as an expert in the field of
6 valuing patents and patent licensing, what was Mr. Sheasby's
7 response?

8 A. I recall there was no objection.

9 Q. All right.

10 MR. STONE: I have no further questions, Your Honor.
11 Thank you.

12 THE COURT: You pass the witness?

13 MR. STONE: Pass the witness.

14 THE COURT: Is there additional cross-examination?

15 MR. SHEASBY: No additional cross-examination, Your
16 Honor.

17 THE COURT: All right. You may step down, Doctor
18 Vellturo.

19 THE WITNESS: Thank you, Your Honor.

20 THE COURT: You're welcome.

21 Ladies and gentlemen, it's been more than two hours since
22 we came back from lunch. We are going to have a recess.

23 If you will simply close your notebooks and leave them in
24 your chairs, follow all my instructions, including not to
25 discuss the case among each other, we will be back shortly to

1 continue.

2 The jury's excused for recess at this time.

3 (Whereupon, the jury left the courtroom.)

4 THE COURT: I want to see Mr. Sheasby, Mr. Bunt, Mr.
5 Stone, and Ms. Smith in chambers.

6 We stand in recess.

7 (Brief recess.)

8 THE COURT: Be seated, please.

9 Am I correct, Mr. Stone, the Defendant's going to rest
10 its case in chief at this point?

11 MR. STONE: You are correct, Your Honor.

12 THE COURT: Let me bring the jury in and we will get
13 it on the record.

14 Let's bring the jury in, please.

15 (Whereupon, the jury entered the courtroom.)

16 THE COURT: Please be seated, ladies and gentlemen.
17 Defendant, call your next witness.

18 MR. STONE: Your Honor, at this time Defendant PNC
19 Bank rests.

20 THE COURT: All right. The Defendant has now rested
21 its case in chief. Does the Plaintiff have rebuttal witnesses
22 to present?

23 MR. SHEASBY: Your Honor, USAA has no additional
24 witnesses to present.

25 THE COURT: All right. Am I correct that both

1 sides, subject to final instructions to the jury and closing
2 arguments, rest and close?

3 MR. STONE: Yes, Your Honor.

4 MR. SHEASBY: Yes, Your Honor.

5 THE COURT: All right. Ladies and gentlemen of the
6 jury, that means you have now heard all the evidence in this
7 case. It also means that I'm about to let you go home a lot
8 earlier than usual.

9 There are some matters I have to take up with counsel
10 that do not require your presence before I'll be prepared to
11 give you my final instructions on the law, and I expect that I
12 can take care of that this afternoon and this evening to be
13 ready to do that in the morning with you. At least that's my
14 best projection.

15 So that means I'm going to release you for the evening in
16 just a couple of minutes. You'll be free to go and have a
17 short day today. I'm going to want you back in the morning.
18 I don't think I need you here at 8:30. I'm going to ask you
19 to be here at 9:30 in the morning. So you'll be able to come
20 a little later tomorrow.

21 Now, I want you to understand, that is an educated guess.
22 It is not a guarantee. I may be ready to go waiting on you at
23 9:30. You may have to wait 10 or 20 or 30 minutes on me
24 tomorrow. But it's my best estimate as to when everything
25 will be prepared so that I can present you with my final

1 instructions, which as I've told you, is sometimes called the
2 Court's charge to the jury.

3 After I do that, then you'll hear closing arguments for
4 the attorneys for the parties. And once you've heard closing
5 arguments from the attorneys for the parties, then I will
6 instruct you to retire to the jury room and to deliberate on
7 your verdict. And I will send back with you a written
8 document containing various questions that you are to answer.
9 And as I've explained to you, that document is called the
10 verdict form, and your answers to those questions in that
11 document will need to be unanimous.

12 And when you have returned your verdict with unanimous
13 answers to all the questions in that verdict form, then I will
14 review the verdict. If I find it comports with my
15 instructions, I'll accept the verdict, and that will bring the
16 case to a close. But we are -- to use a horse-racing term, we
17 are coming around the clubhouse turn. The end is in sight.

18 So that means that I'm going to reurge one more time to
19 make sure that you don't violate any of my instructions,
20 including not discussing this case with anyone in any way. It
21 would be an absolute travesty to have this much time, effort,
22 and expense wasted if somebody were to violate that important
23 and fundamental instruction. So please keep that and all my
24 other instructions in mind.

25 If you will, simply close your notebooks and leave them

1 on the table in the jury room, have a good evening. Please be
2 back prepared to go by 9:30 in the morning. And with that,
3 ladies and gentlemen of the jury, you are excused for the day.

4 (Whereupon, the jury left the courtroom.)

5 THE COURT: Be seated, please.

6 Counsel, as I indicated to you earlier, it is my practice
7 to take up and consider motions presented by either party
8 pursuant to Rule 50(a) of the Federal Rules of Civil Procedure
9 after all the evidence has been presented. We are at that
10 point. Just a couple of comments, and then I'm going to take
11 another short recess. And when I come back, we will take up
12 motions under 50(a).

13 I understand the Rules of Civil Procedure require that
14 you have to urge an issue under Rule 50(a) so that it is
15 preserved in case you are given an opportunity or need an
16 opportunity to urge it again under Rule 50(b). Please don't
17 start your argument with, This is a patent case. I've been
18 here the whole trial. I know the evidence. I've heard the
19 witnesses.

20 To the extent you can get down to the real brass tacks of
21 what the issue is and why you believe it should be granted or
22 shouldn't be granted, we'll all be better off if we can
23 streamline this process.

24 So I understand it's often the case that attorneys who
25 aren't lead counsel get to make these motions, and I'm happy

1 to give you that opportunity, as the rules permit. But let's
2 try to do it in a way that's focused and streamlined so that I
3 can hear your arguments and I can give you rulings as
4 expeditiously as possible.

5 Also, it is my practice, as I suspect many of you already
6 know, that if you're going to present closing arguments
7 tomorrow, you're not required to be present during the process
8 where 50(a) motions are urged and heard.

9 I am assuming Mr. Sheasby and Mr. Stone will present
10 closing arguments for the parties.

11 Can you confirm that's either correct or incorrect?

12 MR. STONE: That's correct for myself, Your Honor.

13 MR. SHEASBY: Your Honor, Mr. Bunt and I will be
14 presenting closing tomorrow on behalf of USAA.

15 THE COURT: All right. Then the three of you
16 gentlemen are not required to be here once I come back on the
17 bench and we take up matters under Rule 50(a).

18 MR. SHEASBY: Your Honor, may I ask guidance on an
19 issue relating to closings?

20 THE COURT: You may.

21 MR. SHEASBY: So there's some ambiguity as to what
22 has to be exchanged. There's been a lot of statements made on
23 the record that people have objected to, colloquy, like, USAA
24 didn't pull things out. I would request that if they're going
25 to show the jury a portion of the transcript or a portion of a

1 document, we should exchange that in advance. I don't want
2 there to be any surprises or need for objections for
3 completeness. I think the rule should be if we're going to
4 show something to the jury, we should exchange.

5 THE COURT: Mr. Stone, do you have a response?

6 MR. STONE: We're agreeable to that, Your Honor.

7 THE COURT: I'll say this. I've never seen a lawyer
8 object in closing to his opponent's argument that the
9 objecting party didn't get hurt by the objection more than the
10 party who was the subject of it. Juries don't like lawyers to
11 interrupt each other when they're presenting closing
12 arguments, and I don't like it, either.

13 Now, if you believe a violation of the law or procedure
14 that is so material that it can't be overlooked has taken
15 place, I'm not telling anybody you can't make such an
16 objection. But I think both the jury and I know the Court
17 will appreciate a full exchange and meeting and conferring
18 between the parties as to what you're going to say and what
19 you're going to show so that the possibility of that is
20 minimized.

21 I think you'll present a better closing, I think the jury
22 will appreciate it, and I would urge you to approach it in
23 that way. We don't need any of this finger-pointing you
24 didn't give me this, yes, I did give you that, you were too
25 stupid to see it kind of arguments in front of the jury.

1 We've had enough of them behind closed doors.

2 Is there any other guidance that's needed at this
3 juncture?

4 MR. SHEASBY: Nothing from Plaintiff, Your Honor.

5 THE COURT: All right. Anything from Defendant?

6 MR. STONE: No, Your Honor. Thank you.

7 THE COURT: I do want to touch on one other matter,
8 and that has to do with the charge.

9 Ordinarily my practice is to, after motions under Rule
10 50(a) are presented and ruled on, to conduct what I call an
11 informal charge conference where I meet with counsel off the
12 record and review the various points of disagreement and
13 opposition in their latest submitted iteration of both the
14 charge and the verdict form.

15 I directed that a new iteration be submitted to the Court
16 on both of those documents by 3:00 Wednesday. It came in
17 about 3:15. I've had an opportunity to look at it.

18 With regard to the document concerning the Court's final
19 instructions to the jury, it's 73 pages long. It's full of
20 copious footnotes. The parties have put their competing
21 submissions, highlighted them in both green and blue, and
22 there's hardly a page that's white among these 73. Almost
23 every page is green and blue.

24 I've looked at these various areas of disagreement. I
25 candidly don't think the Court would benefit by having an

1 informal charge conference with you. I think I understand the
2 various positions based on both the evidence, your arguments,
3 and the explicit footnotes and annotations that you've put in
4 the submission from both sides.

5 So I'm going to dispense with the informal charge
6 conference. I'm going to spend that time working on what I
7 believe to be a fair and appropriate charge and verdict form
8 based on the evidence and the law. My intention is to do that
9 this evening and to have it delivered to both sides
10 electronically. My best target is by 7:00 in the morning.

11 And at 8:15, I intend to convene a formal charge
12 conference here on the record and I'll hear your objections as
13 to any and all matters, both included and excluded, from the
14 documents that you receive at 7:00. And if I'm persuaded that
15 any of those objections are valid, I'll make the appropriate
16 changes. If not, I won't.

17 But I honestly don't think -- you are so many lightyears
18 apart and you're so dug in in your various positions as
19 indicated by the submission I have in front of me, I just
20 don't see that I would benefit. If there were some close
21 issues that I thought you were close on, I might feel
22 otherwise, but that's not the case here.

23 So we'll complete the 50(a) motion practice. Then I'm
24 going to adjourn for the evening, release you for the evening,
25 and I'm going to work on the charge and the verdict form for

1 as many hours as it takes for me to feel comfortable with it.
2 I'll send it to you tomorrow morning and I'll give you more
3 than an hour to review it. I think that's certainly adequate.
4 You're all familiar with the issues. You're all familiar
5 what's within your latest submission. You'll see what I've
6 included in mine. You'll see if I've done it differently.
7 You'll see if I've left it out. It won't take you long to
8 sort through it.

9 And then we'll convene a formal charge conference at
10 8:15. That should give me time to complete that process and
11 to make any resulting changes to either document so that I can
12 then produce eight copies of the final jury instructions and a
13 clean copy of the verdict form that I will send back with the
14 Court Security Officer when the jury retires to deliberate on
15 their verdict.

16 I've told them 9:30. That's a guess. But sometime
17 mid-morning tomorrow, we should be able to begin my final
18 instructions to the jury, followed by counsel's closing
19 arguments. I would hope the case can get to the jury close to
20 lunchtime. And with that, I would hope we'll see a verdict
21 sometime tomorrow afternoon. That's what I project, and I
22 want to make you aware of what the Court's thinking is and
23 where I'm headed.

24 All right. I'm going to take about a 10-minute recess.
25 I'm going to come back. Those of you that are tasked with

1 presenting motions under Rule 50(a), I will take those up with
2 you then. Those of you that are not assigned any
3 responsibilities in that regard are not required to be here
4 unless you just want to be.

5 And for those of you that have not practiced before me
6 before, when we begin the 50(a) practice or 50(a) process, I
7 typically ask for a single spokesperson from each side to go
8 to the podium and identify for me topically the matters upon
9 which you care to move under Rule 50(a).

10 I find -- and one of the reasons I do this after all the
11 evidence has been presented, I find there are often mirror
12 image opposite motions where the plaintiff seeks to have the
13 Court find and enter judgment as a matter of law that the
14 asserted claims have been infringed, and the defendant seeks
15 an order of the Court finding as a matter of law that the
16 asserted claims have not been infringed.

17 And I can much more efficiently hear competing arguments
18 in opposite directions on those two motions in a companion
19 format than I can splitting them up at various times in the
20 process and hearing the same thing more than once, just
21 presented in the opposite direction.

22 So that's my practice, and that's the way I'll intend to
23 do it. And I'll hope that there will be a representative from
24 both sides that can identify the subject matter of any such
25 motion practice. And then once the topics to be urged under

1 Rule 50(a) are identified to me, then I'll hear argument in
2 whatever format I think is the most efficient.

3 And I certainly understand there may be various counsel
4 assigned various motions, and I'll expect to see different
5 people come and go to present arguments when we get to that
6 point. Are there any questions?

7 MR. SHEASBY: No questions for Plaintiff, Your
8 Honor.

9 MR. STONE: No questions, Your Honor. Thank you.

10 THE COURT: All right. I'll be back in about 10
11 minutes. We'll begin the 50(a) practice at that time.

12 Between now and then, we stand in recess.

13 (Brief recess.)

14 *THE COURT*: Be seated, please.

15 All right, counsel. The Court will now proceed to hear
16 from the parties pursuant to any motions that either may care
17 to make pursuant to Rule 50(a) of the Federal Rules of Civil
18 Procedure.

19 Let me ask if I can have one person from each side go to
20 the podium, and we'll identify topically the subject matter of
21 any motions either side cares to offer, and then I'll come
22 back and, knowing that, we'll structure argument on those
23 motions.

24 Let's start with the Plaintiff's side. What motions, if
25 any, does Plaintiff care to make pursuant to Rule 50(a)?

1 MR. PAYNE: Good afternoon, Your Honor. Stephen
2 Payne for USAA.

3 USAA is bringing Rule 50(a) motions on four topics
4 today: infringement, willfulness, validity, and damages, Your
5 Honor.

6 THE COURT: All right. Thank you, Mr. Payne.

7 Let me hear from the Defendant. What motions or matters
8 does it care to move for under Rule 50(a)?

9 MR. LAWTON: Good afternoon, Your Honor. Adam
10 Lawton on behalf of PNC.

11 PNC intends to present four, what I think Your Honor
12 would call, mirror image motions on non-infringement,
13 invalidity, willful infringement, and damages, as well as a
14 fifth. I think this is a separate fifth motion with respect
15 to 4.20.1, that it does not infringe the asserted patents.

16 THE COURT: All right. Thank you, counsel.

17 Let me ask you this before we launch into actual
18 argument. Is there disagreement between the parties as to the
19 import and substance of Judge Payne's summary judgment order
20 regarding version 4.20.1 as with regards to whether it does or
21 does not infringe the asserted patents?

22 Mr. Payne, it seems pretty clear to me this issue may
23 have already been ruled on.

24 MR. PAYNE: Your Honor, the ruling --

25 THE COURT: Go to the podium, please.

1 MR. PAYNE: Your Honor, there was a summary judgment
2 ruling about three of the Patents-in-Suit, the '432, the '681,
3 and the '605. There was one patent, the '571, that's asserted
4 here where Judge Payne did find there was a genuine dispute.

5 THE COURT: So is this issue about the '571 Patent
6 and whether or not it's infringed by the 4.20.1 version, or do
7 we have an open question as to the -- what I'm calling the
8 MRDC 2006 family of patents? I just want to know the scope of
9 the dispute here.

10 MS. CARSON: May I speak, Your Honor?

11 THE COURT: You may.

12 MS. CARSON: Rebecca Carson for USAA.

13 I think the issue is that the 4.20.1, the parties have
14 agreed that that product is not at issue in this case for
15 purposes of infringement. So it's USAA's position that it's
16 not appropriate to have a judgment because we haven't
17 presented a case that that product infringes those patents.
18 So it's not a live issue in the case. The parties have agreed
19 for purposes of infringement, that's not at issue in this
20 case.

21 The only reason it's at issue is because they have
22 proposed it as a non-infringing alternative. So in terms of
23 the ultimate issue, that's an issue that's sort of subsumed in
24 the damages aspect and in the aspect of whether it's an
25 non-infringing alternative. And certainly we dispute whether

1 it's a non-infringing alternative for all the reasons that
2 we've been talking about this week.

3 THE COURT: I understand the version 4.20.1 is going
4 to be disputed in this case and has been disputed in this case
5 as to whether or not it is or is not a non-infringing
6 alternative.

7 But as to its posture as an infringing product concerning
8 at least the MRDC patents, my reading of Judge Payne's
9 document 522 order is that he reaches the conclusion that it's
10 not.

11 But if you feel differently or you read the order
12 differently, that's what I want to know; or, alternatively, if
13 this is about whether that version violates or infringes,
14 rather, the '571 Patent, which is the fourth patent at issue
15 in this case and is not a part of those MRDC family of
16 patents, I just want some targeting narrowing of what really
17 is the issue, how broad, how narrow it is.

18 MS. CARSON: Sure. So we do think there is a
19 genuine dispute of fact as to the '571 Patent even in view of
20 Judge Payne's order. Judge Payne did issue an order as to
21 that 2006 MRDC patents. I was just noting for the record that
22 we dispute whether it's appropriate to have a judgment of
23 infringement or no infringement as to those patents because,
24 from USAA's perspective, that's not an issue in this case.
25 That product wasn't accused in this case.

1 THE COURT: I understand.

2 Let me ask the Defendant to weigh in on this issue. It's
3 your motion, so tell me exactly the breadth or the narrowness
4 of what you're asking the Court to decide here.

5 MR. LAWTON: Sure, Your Honor. And I apologize that
6 this is maybe a non-traditional motion.

7 THE COURT: This might be said to be a
8 non-traditional case, but anyway.

9 MR. LAWTON: We would be asking for judgment as a
10 matter of law that -- let me back up.

11 I agree with Your Honor that Judge Payne's pretrial
12 ruling has resolved the question with respect to the three --
13 what we call the 2006 MRDC patents. We would be asking for
14 judgment as a matter of law that version 4.20.1 has not been
15 shown to infringe the '571 Patent and has not been shown to
16 infringe any unasserted patents.

17 THE COURT: Okay. All right. That clarifies it for
18 me, counsel. Thank you.

19 MR. LAWTON: Thank you, Your Honor.

20 THE COURT: All right. With that input, what I'd
21 like to do is hear from both sides on the
22 infringement/non-infringement issue.

23 I'll hear from Plaintiff first as to the basis of their
24 motion that judgment as a matter of law should be entered that
25 the asserted claims are infringed by the Defendant's accused

1 product.

2 And then I'll hear from Defendants as to why the Court
3 should enter judgment as a matter of law that there is no
4 infringement of the accused product by the asserted claims.

5 Let me hear from Plaintiff first.

6 MR. PAYNE: Yes, Your Honor.

7 Plaintiffs move for judgment as a matter of law that no
8 reasonable jury could find that PNC has not literally
9 infringed the patents-in-suit. PNC does not dispute that the
10 accused product practices each and every element of the claims
11 except for the elements related to a customer mobile device,
12 checking for errors in claim 1 of the '432 Patent, and the
13 elements about taking and presenting photos in the '605 and
14 '681 Patents.

15 The sole non-infringement argument advanced by PNC as to
16 claim 1 of the '571 Patent is that PNC does not make, use,
17 offer for sale, or in any way make available mobile devices to
18 their customers. This argument fails as a matter of law
19 because claim 1 of the '571 Patent is a storage medium claim
20 that does not require the presence of a mobile device for
21 infringement.

22 The same is true for claim 30 of the '681 Patent. PNC's
23 argument that it does not supply mobile devices also fails to
24 meet the applicable Federal Circuit legal standard for
25 infringements.

1 Further, there was substantial evidence at the trial from
2 the testimony of Doctor Conte, Mr. Wilkinson, Mr. Prasad, Mr.
3 Goodstein, Mr. Trebilcock, Mr. Kunz, Ms. Larrimer, and Doctor
4 Bovik that has shown that the accused products practice each
5 and every element of the asserted claims.

6 For example, Doctor Conte demonstrated that the accused
7 product checks for errors as claimed in the '432 Patent, and
8 takes and presents photos to the customer as claimed in the
9 '605 and '681 Patents.

10 Further, the testimony of Doctor Conte has shown that the
11 PNC mobile deposit application infringes under the doctrine of
12 equivalents because it performs substantially the same
13 function as the asserted claims in substantially the same way
14 to obtain substantially the same result.

15 PNC did not dispute the doctrine of equivalents for the
16 '432 Patent except on the legally erroneous basis that they
17 were not equivalent in 2006.

18 And, therefore, Plaintiffs respectfully request that the
19 Court enter judgment in USAA's favor on the issue of
20 infringement and hold that Defendants have infringed the
21 patents-in-suit.

22 THE COURT: Thank you, counsel.

23 Let me hear opposing argument from the Defendant.

24 MR. LAWTON: Thank you, Your Honor.

25 And just a preliminary note. In addition to arguing this

1 motion orally, we plan to present a written motion tonight
2 after the transcript of today's trial day becomes available.

3 THE COURT: That's fine, but I don't intend to
4 withhold my ruling until you've had a chance to file something
5 in writing.

6 MR. LAWTON: I understand. Thank you, Your Honor.

7 So PNC moves for judgment as a matter of law that its
8 accused app or accused system does not infringe any of the
9 asserted patents.

10 First, as to all asserted patents, USAA has failed to
11 prove direct infringement. The claims require, among other
12 things, a customer's mobile device or a computer-readable
13 medium running software. It is undisputed that PNC does not
14 make, use, sell, or import mobile devices or the
15 computer-readable medium contained within mobile devices.

16 Software on PNC's servers, when executed, does not
17 perform the steps required by USAA's computer-readable medium
18 claims. USAA has abandoned any claim of indirect
19 infringement, so all that's left is their attempts to show
20 divided infringement. But they have failed to show that PNC
21 directs or controls its customers, or conditions any kind of
22 benefit on using its mobile app, or puts the claimed system as
23 a whole into service, or combines all of the claim elements.
24 On the contrary, customers can deposit checks into their
25 accounts and enjoy the full benefits of PNC's banking services

1 by going to a branch or an ATM.

2 There is no requirement to download the app.

3 Accordingly, there is no divided infringement and thus no
4 direct infringement.

5 Second, as to the '432 Patent, PNC does not practice
6 checking for errors limitation as claimed. As Doctor Bovik
7 explained, the checking for errors in the accused system
8 happens on the server, not the phone. The server finds the
9 error, it sends a message to the phone which receives it and
10 acts on it say by displaying an error code. That's not
11 checking for errors. It's acting on an error already found by
12 the server.

13 The only analysis that USAA pointed to that happens on
14 the phone is deposit limit check, also called the RDC velocity
15 limit check. But that is not checking for errors as claimed
16 because it occurs before the check image is even captured and
17 prohibits the customer from taking any check picture if the
18 limit is exceeded.

19 There is no DOE infringement because finding that
20 checking for errors on the server isn't equivalent would
21 vitiate the claim limitation which specifically requires that
22 error checking happen on a mobile device, not the separately
23 recited bank computer.

24 There's a separate prosecution history estoppel argument,
25 which I understand the Court will take up post-verdict if

1 needed, but I wanted to note it briefly for the record.

2 The checking for errors limitation was added during
3 prosecution in a narrowing amendment. USAA cannot rebut the
4 presumption that the amendment was made for a purpose related
5 to patentability, and USAA cannot rebut the resulting
6 presumption that it surrendered equivalence to the claim
7 limitation.

8 Third, with respect to the '605 and '681 Patents, the
9 Court has heard a lot of the requirement of capturing the
10 photos, plural, and after that, presenting them. In other
11 words, take, take, show, show. And that is not what PNC does
12 or did.

13 Swapping the order takes it out of the realm of literal
14 infringement, and it's also not DOE infringement, either,
15 because, as Doctor Bovik explained, PNC's way is not only a
16 different way of capturing images, it is indeed a better way
17 because it avoids taking the second photo if, after seeing the
18 first, the customer decides that there is something wrong with
19 it. So that is a different way of producing a different
20 result.

21 USAA's theory of equivalence also vitiates the claim
22 limitations which have a specific temporal requirement. And,
23 again, for both patents, prosecution history estoppel bars
24 infringement under the DOE for the same reasons that I
25 described with regard to the '432 Patent and USAA cannot rebut

1 the presumption of surrender for those claim limitations.

2 Fourth, with respect to the '571 Patent, the evidence
3 does not support a finding that the limitation of image
4 monitoring or capture module as construed by the Court is
5 found in the accused product.

6 And so for those reasons, PNC respectfully moves for
7 judgment as a matter of law of no infringement on all asserted
8 patents.

9 THE COURT: Thank you, Mr. Lawton.

10 Let me now hear competing argument from the parties
11 regarding the issues of validity or invalidity.

12 Plaintiffs moved for judgment as a matter of law that the
13 asserted patents are valid as a matter of law. Defendant has
14 correspondingly moved for judgment as a matter of law that the
15 asserted claims of the patents-in-suit are invalid under both
16 the theories of enablement and written -- lack of written
17 description.

18 Let me hear -- since Defendant has the burden on that
19 issue, let me hear from Defendant first, and then I'll hear
20 following argument, responsive argument, from the Plaintiff.

21 MR. LAWTON: Thank you, Your Honor.

22 PNC moves for judgment as a matter of law that the 2006
23 patents are invalid for lack of enablement and inadequate
24 written description, and that the '571 Patent is invalid for
25 lack of enablement.

1 First, with regard to the 2006 patents, no reasonable
2 jury could find that the patents are enabled. The *In Re Wands*
3 factors that the Federal Circuit has laid out and which Doctor
4 Kia's testimony spoke about today demonstrate this.

5 None of USAA's conception evidence was corroborated, and
6 uncontroverted testimony shows that there were key
7 technological challenges in 2006 in moving from a flat-bed
8 scanner deposit system, which USAA had been using, to a
9 mobile-based system. USAA's own experts described these
10 challenges in depth and described the nature of the invention
11 as a paradigm shift.

12 Given this so-called paradigm shift, USAA's patent
13 specifications had to disclose guidance and direction on how
14 to implement a mobile phone-based system, and they did not.
15 The 2006 claims broadly claim a remote deposit system that can
16 deposit checks on mobile devices under varying unpredictable
17 conditions, including different lighting and orientation,
18 which is an extremely broad scope.

19 One would expect, given the paradigm shift and all of the
20 various unpredictable factors that can affect remote check
21 deposit in an uncontrolled environment, for USAA to have
22 provided specific instructions and guidance on how a person of
23 ordinary skill could account for these factors and broadly
24 achieve mobile deposit successfully, but USAA did not.

25 As we heard, USAA's patent specifications do not disclose

1 a working example or even mention mobile devices. All they
2 disclosed were generic instructions. They did not disclose
3 the custom algorithms that USAA witnesses admitted were
4 necessary to develop a working system and to overcome all the
5 challenges of capturing a check image of sufficient quality in
6 an uncontrolled environment.

7 Finally, on the issue of enablement for the 2006 patents,
8 the timeline of events clearly shows a significant amount of
9 undue experimentation. USAA essentially invented or developed
10 mobile phone deposit after it filed its 2006 patent
11 applications.

12 It has attempted to frame its post-filing work as simply
13 commercialization work. But no reasonable jury could agree,
14 given that USAA has not done research and had not done
15 research on how to implement a mobile deposit system before
16 the filing of the 2006 applications. Its witnesses admitted
17 that USAA had to do work in 2007 to even determine the
18 viability of remote check deposit with mobile devices, and in
19 December 2007 USAA was still in the research phase as it had
20 only a 25 percent success rate in reading critical check
21 information.

22 USAA's engineers were persons of ordinary skill, and they
23 had to do serious work to develop custom algorithms to handle
24 all of the complex issues they were facing with check capture
25 sufficiently for a mobile device-based system.

1 On the issue of inadequate written description for the
2 2006 patents, uncontroverted evidence shows that the
3 specification does not mention a mobile device, and the
4 specification does not otherwise describe the invention being
5 implemented on mobile devices. The patent figures
6 illustrating the system show a computer communicating with
7 separate image capture devices.

8 Moving on to the '571 Patent, the auto-capture patent,
9 this patent is also invalid for lack of enablement because of
10 the same factors described earlier. Again, none of USAA's
11 evidence of conception was corroborated. The specification,
12 moreover, lists a broad list of monitoring criteria for
13 successful auto-capture, but there is no direction or guidance
14 on how the criteria operate.

15 As Doctor Kia testified, a person of ordinary skill
16 attempting to implement the claimed invention would need
17 instruction on, number one, the mix of monitoring criteria to
18 apply that would result in a check image that likely would be
19 acceptable deposits -- accepted for deposits; and, number two,
20 the pass-and-fail ranges for any necessary monitoring
21 criteria. The specification provided neither of those things.

22 The specification did not even disclose the critical
23 algorithm for measuring the amount of shaking during image
24 capture. That is especially problematic for enablement
25 because the evidence showed how nascent and difficult

1 auto-capture was in 2009.

2 Given these circumstances, it was not enough for the
3 specification to simply list well-known image-monitoring
4 criteria at a high level because a person of ordinary skill
5 would not have had the prior independent knowledge to
6 implement the right permutation of the criteria and specify
7 their specific ranges to successfully implement auto-capture
8 without undue experimentation.

9 Finally, it's undisputed that USAA did not have a working
10 auto-capture example for years after it filed the 2009
11 application, and then it had to spend years researching and
12 experimenting on thousands of check images to even make things
13 work. No reasonable jury could find that USAA was simply
14 commercializing its product after invention during that time.

15 THE COURT: Thank you, counsel.

16 Let me hear corresponding argument from Plaintiff on the
17 validity issue.

18 MR. PAYNE: Yes, Your Honor.

19 Plaintiffs would oppose Defendant's motions and
20 respectfully move under Rule 50(a) for judgment as a matter of
21 law with respect to the Defendant's affirmative invalidity
22 defenses of written description and enablement. No reasonable
23 jury could find based on the evidence presented that Defendant
24 has established and met its burden of proof with respect to
25 its defenses.

1 I'll start with the issue of written description. As to
2 that issue, PNC does not assert a written description defense
3 as to the '571 Patent.

4 As to the 2006 patents, PNC has the burden of proving
5 lack of written description by clear and convincing evidence.
6 The determination of whether a patent is invalid is a question
7 of fact review for substantial evidence, and no reasonable
8 jury could find, based on the evidence presented, that the
9 asserted claims of the 2006 patents lack written description
10 support.

11 For example, Defendant presented the testimony of Doctor
12 Kia regarding written description, who opined that there is no
13 written description support in the patent for an integrated
14 device with a camera, but Doctor Kia admitted on cross
15 examination that figure 3 of the '605 Patent discloses such a
16 device.

17 Written description has further been shown by evidence of
18 the content of the specification, the Patent Office's
19 determination that the applications were supported by the
20 original 2006 specification and the testimony of
21 Mr. Wilkinson, Mr. Prasad, Mr. Oakes, Mr. Medina, and
22 Mr. Bueche. For example, Mr. Prasad testified as to
23 techniques and instructions that are disclosed in the 2006
24 patents to ensure successful deposit with digital cameras.

25 Because PNC has not introduced substantial evidence

1 supporting a finding that the patent specifications lack
2 written description support, USAA respectfully requests that
3 judgment be entered in its favor that the patents-in-suit are
4 not invalid for lack of written description.

5 To move to the enablement issue, Your Honor, as to that
6 issue, no reasonable jury could find, based on the evidence
7 presented, that the asserted claims of the patents-in-suit are
8 not enabled. Enablement is judged at the date of filing, not
9 in light of later developments. And Title 35 requires only
10 that the inventor enable one of skill in the art to make and
11 use the full scope of the claimed invention; it does not
12 require that a patent disclosure enable one of ordinary skill
13 to make and use a perfected commercially viable embodiment.

14 Enablement is a -- excuse me. Defendant presented the
15 testimony of Doctor Kia regarding enablement, and Doctor Kia
16 admitted that in 2006 before USAA filed its patents he would
17 have had the ability to create a system that used handheld
18 devices to capture images of checks and deposit them at a
19 bank. That testimony was earlier today. Mr. Prasad also
20 testified that USAA's system functioned with digital cameras
21 in 2006.

22 Regarding the '571 Patent, as an example, Mr. Prasad
23 testified to the capabilities provided by the '571 Patent, and
24 Doctor Conte testified about the specific disclosures related
25 to monitoring criterion in the specification and this is, of

1 course, in addition to the evidence of the specification
2 itself. PNC's expert Doctor Bovik admitted, and USAA's expert
3 Doctor Conte testified, that all of the monitoring criteria
4 disclosed in the '571 patent specification are used in PNC's
5 infringing product. Enablement has further been shown by
6 evidence of the testimony of Mr. Wilkinson, Mr. Prasad,
7 Mr. Oakes, Mr. Medina, and Mr. Bueche, and their testimony
8 shows that undue experimentation was not required.

9 And the only evidence presented by PNC does not relate to
10 what is enabled by the specification, but, rather, to creation
11 of a commercial product, which USAA respectfully submits is
12 not relevant to the enablement legal standard.

13 And USAA requests that judgment be entered in its favor
14 on the issue of enablement.

15 THE COURT: All right. Thank you, Mr. Payne.

16 Let's turn next to the competing positions between the
17 parties concerning the issue of willful infringement.

18 Let me hear from the Plaintiff on this first, please.

19 MR. PAYNE: Thank you, Your Honor.

20 Plaintiff moves for judgment as a matter of law that no
21 reasonable jury could find that PNC has not willfully
22 infringed the asserted claims of the patents-in-suit, and
23 willfulness is shown by the testimony of Mr. Wilkinson,
24 Mr. Prasad, Doctor Conte, PNC's own executives Mr. Goodstein,
25 Mr. Trebilcock, Mr. Kunz, Ms. Larrimer, and by other witnesses

1 in the case, including Mr. Kennedy, Doctor Bovik, Mr. Medina,
2 Mr. Bueche, Mr. McKinley, and others.

3 USAA has introduced substantial evidence that PNC
4 willfully infringed the patents-in-suit, including, for
5 example, evidence that PNC examined USAA's system and
6 leveraged design learnings when creating its own infringing
7 system, that PNC knew of USAA's patents, and that PNC acted
8 with reckless or callous disregard of or with indifference to
9 the rights of USAA.

10 As example -- as further examples, PNC's witnesses
11 admitted to being aware prior to the litigation of USAA's
12 patents and USAA's patented Deposit@Mobile application and the
13 prior litigation concerning the same patent families at issue.
14 This is also shown by PNC documents and evidence that were
15 presented at the trial.

16 Pnc has not introduced substantial evidence from which a
17 reasonable jury could conclude that PNC did not willfully
18 infringe the patents-in-suit, and so Plaintiffs would
19 respectfully request that the Court enter a judgment in its
20 favor on the issue of willful infringement.

21 THE COURT: Let me hear from the Defendant on this
22 matter.

23 MR. LAWTON: PNC respectfully moves for judgment as
24 a matter of law of no willful infringement or, in the
25 alternative, no willful infringement of the asserted patents

1 before November 2019. The jury does not have a legally
2 sufficient evidentiary basis to find that PNC willfully
3 infringed any or all of the asserted patents.

4 To show willful infringement, USAA must at a minimum
5 prove that PNC knew of the specific patent that is at the
6 alleged to have willfully infringed. For the period before
7 November 2019, USAA presented no evidence that PNC knew of any
8 of the specific asserted patents. Knowledge that USAA had a
9 patent portfolio is insufficient. Knowledge of family member
10 patents is insufficient. Knowledge that USAA offered check
11 deposit capability in a mobile app and that it claims to have
12 had patents on it is insufficient as well.

13 For separate and independent reasons for both the periods
14 before and after November 2019, judgment as a matter of law of
15 no willful infringement is warranted because USAA has not
16 introduced any evidence that PNC deliberately and
17 intentionally infringed any patent claim of which it is aware,
18 as needed to support a finding of willful infringement. On
19 the contrary, the evidence compels a reasonable jury to find
20 all of the following:

21 No. 1. PNC launched its mobile deposit feature before
22 any of the asserted features existed.

23 No. 2. PNC used solutions offered to it by reputable
24 vendors and did not copy USAA's patents, USAA's source code,
25 or USAA's system.

1 No. 3. USAA's public statements in 2017 that it had sent
2 letters to banks about licensing its mobile deposit patents,
3 combined with the fact that PNC received no such letter,
4 combined with the fact that PNC got reassurance from its
5 vendor NCR, led PNC to genuinely believe that it was not
6 infringing any of USAA's patents.

7 No. 4. The Wells Fargo lawsuits did not put PNC on
8 notice of any alleged infringement. Wells Fargo's and PNC's
9 systems are different, and use of Mitek software is not enough
10 to infringe because the software is customizable and was
11 customized by Wells Fargo.

12 No. 5. PNC's conduct demonstrates its good faith. Once
13 USAA identified the accused features, PNC promptly removed
14 them. The Court determined pretrial that those changes
15 avoided three of the asserted patents.

16 As to the fourth patent, which is the '571 Patent, PNC's
17 new app avoids infringement of that patent as well because
18 there is no capability for users to use the product to perform
19 the claim limitations.

20 Finally on this point, the reasonableness of an accused
21 infringer's defenses can defeat a willfulness claim. PNC's
22 invalidity and non-infringement defenses here are reasonable
23 and asserted in good faith even if they do not ultimately
24 succeed.

25 And for these reasons, we respectfully request judgment

1 as a matter of law of no willful infringement.

2 THE COURT: Thank you, counsel.

3 Let's turn to the competing issues regarding the topic of
4 damages.

5 Let me hear from the Plaintiff on this first.

6 MR. PAYNE: Yes, Your Honor.

7 Plaintiffs have motions on two related aspects of
8 damages--one for a damages award, and second, that version
9 4.20.1 is not a non-infringing alternative. I'll start with
10 the reasonable royalty.

11 Plaintiffs move for judgment as a matter of law on past
12 damages together with interest and costs as fixed by the Court
13 under 35 U.S.C. § 284. USAA has proven as a matter of law by
14 substantial evidence that they are owed damages for PNC's
15 infringement of the patents-in-suit.

16 Plaintiff's damages expert Mr. Kennedy testified in this
17 case that he calculated a reasonable royalty based on the
18 apportioned value of the patented technology and comparable
19 licenses. Mr. Kennedy also testified on the cost savings
20 attributable to the patents-in-suit. Based on all of this
21 evidence, Mr. Kennedy testified that a reasonable royalty
22 would be \$300.4 million for 105.8 million infringing check
23 deposits during the damages period, broken down to
24 \$115.5 million for the '681, '605, and '432 patents, and
25 \$184.8 million for the '571 Patent, with an average of \$3.06

1 per infringing mobile check deposit.

2 Mr. Kennedy relied, in addition to his own expert
3 analysis, on the testimony of the trial and deposition
4 testimony of numerous witnesses in the case, including
5 Mr. Wilkinson, PNC executives including Mr. Goodstein,
6 Mr. Kunz, and Mr. Trebilcock, USAA witnesses such as
7 Mr. McKinley, PNC's internal documents and financial data
8 regarding the value of the patented technology to PNC, and
9 comparable license agreements.

10 USAA requests that the Court should enter judgment as a
11 matter of law for the amount of \$300.4 million in past
12 damages. And this award is also supported by the testimony of
13 Mr. Wilkinson regarding the USAA licensing efforts, the value
14 of the patents, patent marking, and admissions by PNC
15 witnesses including Ms. Larrimer and Mr. Vellturo.

16 THE COURT: All right. Thank you Mr. Payne.

17 I'm sorry. You're not finished?

18 MR. PAYNE: Sorry, Your Honor. I can turn to the
19 issue of 4.20.1 --

20 THE COURT: I didn't mean to preempt your argument.
21 Go ahead and finish and turn to that, please.

22 MR. PAYNE: Yes, Your Honor.

23 USAA also moves that no reasonable jury could find based
24 on the evidence presented that the version 4.20.1 is a
25 non-infringing alternative to the patents-in-suit. As the

1 party contending that it has an alternative, PNC has the
2 burden to prove that version 4.20.1 is available to it, and
3 under Federal Circuit law a proposed alternative that is
4 covered by patents outside of the lawsuit, even though the
5 alternative does not -- even though the alternative may or may
6 not infringe the asserted patents is unavailable. And that's
7 the *AstraZeneca* case, 78 F.3d, 1324 from the Federal Circuit.

8 USAA has presented evidence from Doctor Conte,
9 Mr. Wilkinson, Mr. Prasad, and PNC's own witnesses Mr. Kunz,
10 Mr. Goodstein, Ms. Larrimer, that version 4.20.1 is covered by
11 USAA's '598, '638, and '136 patents. For example, Doctor
12 Conte testified that this alternative does not avoid
13 infringement. USAA owns other patents in the 2006 family, the
14 '598, the '638, and '136 Patents, and they do not require any
15 of auto-capture, retake photo screen, or keypad entry of an
16 amount. And that's page 454 of the trial transcript.

17 Doctor Bovik, PNC's expert on non-infringement, did not
18 render any opinions on these patents, and that's pages 884 to
19 885 of the transcript.

20 Pnc's corporate representative Ms. Larrimer testified
21 that, quote, "It doesn't solve the problem if the new product
22 infringes other USAA patents." That's the question.

23 The answer is, "Yes." It's page 758 of the transcript.

24 PNC did not introduce evidence, much less substantial
25 evidence, that version 4.20.1 is not covered by the '598, '638

1 and '136 Patents.

2 I'll also, because it may come up from the Defendant,
3 address the '571 Patent, Your Honor.

4 THE COURT: That's fine.

5 MR. PAYNE: It's USAA's position that version 4.20.1
6 also infringes the '571 Patent because it is not disputed that
7 the code for performing auto-capture remains present on -- in
8 the PNC accused product. Doctor Conte testified to that and
9 Doctor Bovik did not dispute it, nor did PNC's own witness.
10 Mr. Goodstein testified that the code remained present. And
11 under Federal Circuit case law, including *Finjan*, the code
12 need not be activated to infringe.

13 And so USAA would submit that there is infringement as to
14 the '571 Patent as a matter of law, and because PNC has not
15 introduced substantial evidence supporting a finding that
16 version 4.20.1 was available, USAA would request that judgment
17 be entered in its favor that 4.20.1 was not an available
18 non-infringing alternative.

19 THE COURT: All right. Thank you.

20 Let me hear from Defendant on the damages issue as well
21 as the version 4.20.1 matter.

22 MR. LAWTON: PNC moves for judgment as a matter of
23 law that USAA failed to present a legally or factually
24 sufficient evidentiary basis for the damages it seeks, and
25 that in the event of liability, the Court should award an

1 amount no more than that supported by proper and reliable
2 evidence.

3 USAA is seeking a reasonable royalty in this case, not
4 lost profits. USAA has not proven entitlement to lost
5 profits. And as for reasonable royalties, the opinions of
6 USAA's damages expert Mr. Kennedy violated the legal standards
7 for reasonable royalties in multiple ways.

8 First, Mr. Kennedy used a legally impermissible royalty
9 base. He did not base his royalty on the smallest saleable
10 patent practicing unit. His royalty base included profits
11 from unpatented products and services. There is no economic
12 basis for his having done so, whether under the entire market
13 value rule, a theory of convoyed sales, a theory of so-called
14 pull-through profits, a theory of ecosystem benefits, or
15 otherwise.

16 The controlling authorities that render Mr. Kennedy's
17 opinion on this point legally relevant include *Rite-Hite*
18 *versus Kelley*, which is 56 F.3d 1538, *American Seating versus*
19 *USSC*, 514 F.3d 1262, and *DePuy Spine versus Medtronic*, 567
20 F.3d 1314.

21 Second, Mr. Kennedy artificially inflated his royalty
22 base by double-counting or triple- or quadruple-counting the
23 alleged benefits of the patented technology, including by
24 double-counting the alleged cost savings that he says PNC
25 realizes by offering mobile check deposit.

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(Redacted.)

1 Finally, USAA did not present any evidence of damages
2 tied to PNC's having the PNC mobile app on PNC's own computers
3 or servers as distinct from use by customers. Therefore, even
4 if PNC's own servers or computers storing the PNC mobile app
5 for MRDC is infringing, that alleged infringement cannot
6 support any of Mr. Kennedy's damages opinion.

7 For those reasons, we request that the Court grant
8 judgment as a matter of law that, in the event of liability,
9 USAA is entitled to no more than a nominal royalty supported
10 by the record.

11 With the Court's permission, I can move on to version
12 4.20.1.

13 THE COURT: Please do.

14 MR. LAWTON: USAA has failed to provide sufficient
15 evidence for a reasonable jury to rule for it on the issue of
16 whether 4.20.1 is a non-infringing alternative.

17 I would begin on one issue on which there is actually no
18 evidence at all in USAA's favor, and that is the fact that
19 PNC's redesigned app version 4.20.1 does not infringe any of
20 the four asserted patents. The Court has already resolved
21 this issue as to the 2006 MRDC patents, '432, '605, and '681,
22 but USAA offered no evidence of infringement of the '571
23 Patent either. Doctor Conte agreed that version 4.20.1 does
24 not in its default configuration infringe the '571 Patent.

25 USAA's sole theory was that the code could be modified to

1 reenable the auto-capture feature, but whether PNC could do
2 that is not the issue. PNC's customers using version 4.20.1
3 as distributed cannot, and that means that the app as
4 distributed to customers is not even capable of infringing.
5 Even Doctor Conte didn't suggest that version 4.20.1 is
6 capable of infringing.

7 In a raft of Federal Circuit cases, not just *Finjan*
8 *versus Secure Computing* or *VirnetX versus Apple*, but also
9 *Nazomi Communications*, *Typhoon Touch Technologies*, and *Fantasy*
10 *Sports*, and others, confirm that the mere fact that code could
11 be modified to infringe is not enough.

12 So the Court should hold as a matter of law and instruct
13 the jury that 4.20.1 is a non-infringing alternative to all
14 four asserted patents.

15 The Court should also hold that version 4.20.1 is a
16 non-infringing alternative as to any unasserted patents, most
17 notably the PNC 3 patents that are asserted in another
18 litigation. In the first place, whether version 4.20.1
19 infringe or infringes unasserted patents would not be relevant
20 to the value of the asserted patents, which is the only
21 valuation exercise at issue in this case.

22 Also, Doctor Conte did not offer any element-by-element
23 non-conclusory analysis regarding infringement of the PNC 3
24 patents. USAA did and has done its level best to shift the
25 burden to PNC to disprove infringement, but that is not the

1 law. USAA bears the burden to prove infringement and bears
2 the burden of proof in every way relevant on infringement, on
3 damages, and the lack of a non-infringing alternative.

4 We have cited multiple authorities in our briefing to the
5 Court and will this evening again. USAA's *AstraZeneca* case is
6 inapposite for reasons we have explained and will include
7 again in our brief this evening.

8 And if the Court has no further questions, that is the
9 end of my presentation.

10 THE COURT: All right. Thank you, counsel.

11 With regard to these various matters that have been
12 raised and presented by counsel this afternoon, the Court
13 finds and rules as follows:

14 Concerning Plaintiff's motion to establish and find as a
15 matter of law that the asserted claims have been infringed by
16 the accused products, the Court denies that motion. As to the
17 Defendant's motion that the Court should enter judgment as a
18 matter of law that its accused products do not infringe the
19 asserted claims, the Court denies that motion.

20 With regard to the Defendant's motion that the asserted
21 claims are invalid under a combination or in separate order of
22 theories of lack of enablement -- excuse me -- lack of
23 enablement or lack of written description, the Court denies
24 that motion. Likewise, the Court denies the Plaintiff's
25 motions that the Court should enter judgment as a matter of

1 law finding that the asserted claims of the patents-in-suit
2 are valid as a matter of law.

3 The Court denies the parties' competing motions with
4 regard to willful infringement and believes that that is best
5 appropriately determined by the jury, and that judgment as a
6 matter of law is inappropriate either that there is no willful
7 infringement or that there is willful infringement in this
8 case.

9 With regard to the damages issues, including the issues
10 related to version 4.20.1 and whether it is or is not a
11 non-infringing alternative, with regard to the issue of
12 damages, the Plaintiff's motion and the Defendant's competing
13 motion in that regard are denied.

14 In short, counsel, all the various motions presented by
15 both parties pursuant to Rule 50(a) are denied by the Court.

16 That completes motion practice under Rule 50(a). As I
17 indicated earlier, the Court now will turn back to its efforts
18 to digest, review, and from that process generate an
19 appropriate final jury instruction and verdict form,
20 considering the 70-plus page submission from the parties that
21 came in Wednesday afternoon, as well as the evidence the
22 Court's heard throughout the trial, and I hope to have that
23 deliverable to you by email at 7:00 tomorrow morning. And I
24 intend to have you here by 8:15 and go on the record to take
25 up any formal objections to the charge and the verdict form

1 that either party feels are appropriate and necessary
2 considering the interests of their respective clients.

3 Are there questions before we recess for the evening?

4 Go ahead, Ms. Smith.

5 MS. SMITH: Your Honor, I know that cameras aren't
6 typically allowed in a federal courthouse, but I would like to
7 use my camera to take a picture of the flip chart, with leave
8 of the Court; the writing that we wrote on the flip chart,
9 please, Your Honor.

10 THE COURT: I assume that photograph or photographs
11 may make their way to a slide that will be used in closing
12 arguments?

13 MS. SMITH: It's quite possible, Your Honor.

14 THE COURT: Plaintiff have any opposition to that?

15 MS. CARSON: Not at this time, Your Honor.

16 THE COURT: All right. I'll grant leave to let
17 either side take whatever photographs that they want -- they
18 may want of any of the pages of the flip chart that have been
19 used to generate demonstratives over the course of the trial.
20 And each are free to use them in whatever way they believe is
21 appropriate, subject to objection from the other party. But I
22 won't preclude the use of -- I assume it will be cell phone
23 cameras to take those pictures.

24 MS. SMITH: Yes, Your Honor. And I don't know
25 exactly what we have up our sleeve. I just got an email

1 asking for a photograph of what we had drawn.

2 THE COURT: That's fine.

3 And Ms. Carson, if you'd feel better, why don't you both
4 take the same pictures of same pages before you leave here
5 this evening. If you need them, you'll have them; if you
6 don't, you won't.

7 MS. CARSON: Sounds good, Your Honor.

8 THE COURT: Is there anything else?

9 MS. CARSON: Nothing from Plaintiff.

10 MS. SMITH: No, Your Honor. Thank you.

11 THE COURT: All right, counsel. I will see you in
12 the morning at 8:15 to take up a formal charge conference, and
13 until that time, unless there's something else, you are
14 excused.

15 And the Court stands in recess.

16 (The proceedings were concluded at 4:45 p.m.)

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1 I HEREBY CERTIFY THAT THE FOREGOING IS A
2 CORRECT TRANSCRIPT FROM THE RECORD OF
3 PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.
4 I FURTHER CERTIFY THAT THE TRANSCRIPT FEES
5 FORMAT COMPLY WITH THOSE PRESCRIBED BY THE
6 COURT AND THE JUDICIAL CONFERENCE OF THE
7 UNITED STATES.

8
9 S/Shawn McRoberts 05/12/2022

10 _____DATE_____
11 SHAWN McROBERTS, RMR, CRR
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